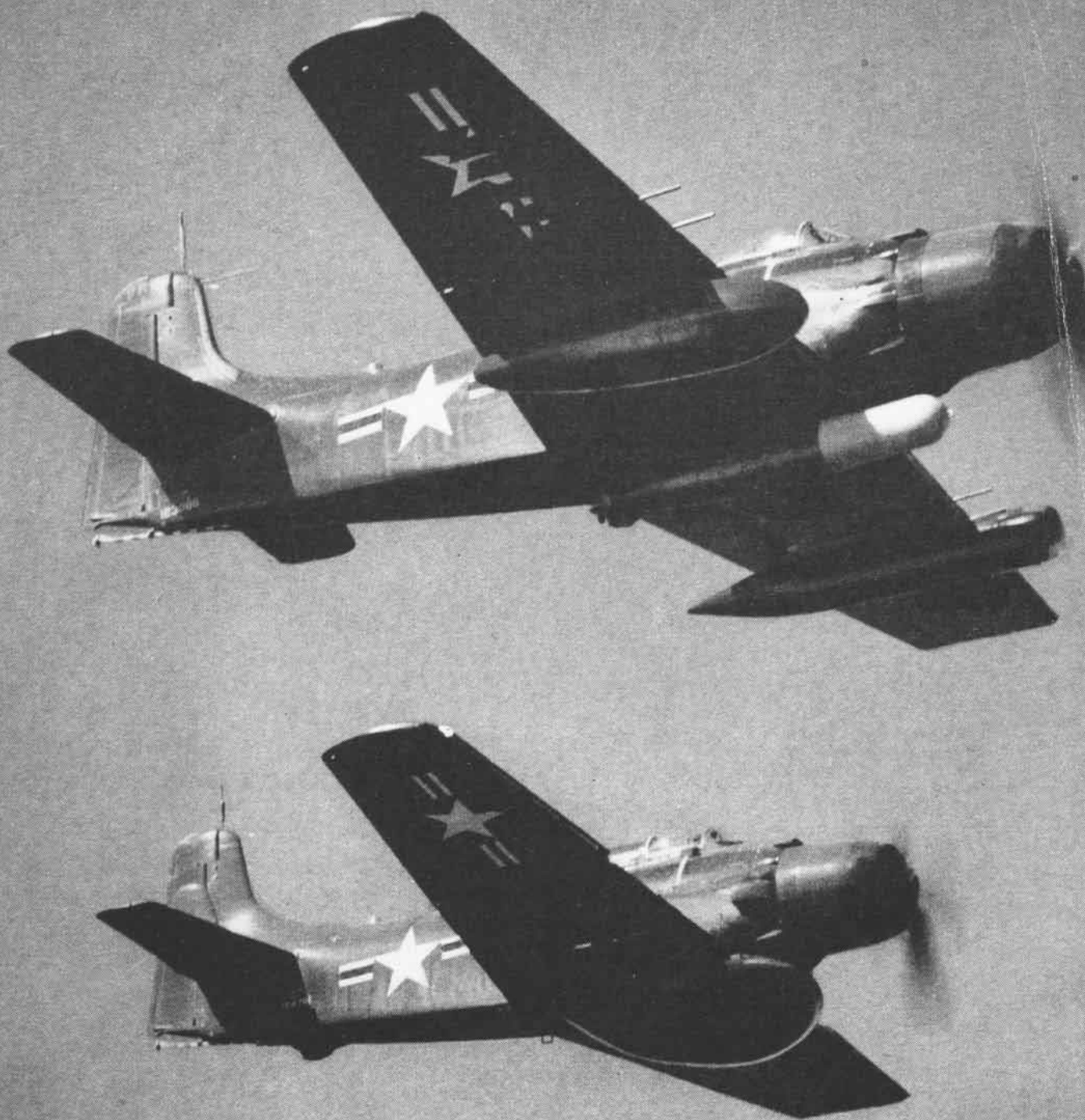


NAVAL AVIATION

NEWS

RESTRICTED



Material Center
Korean Air War
NavAer 00-75-R3

NOVEMBER 1951

RESTRICTED





NAVY ARMAMENT OVER KOREA

FLYING a third of Korea combat sorties, Navy and Marine planes, operating from carriers close to enemy shores, pack a heavy wallop of bombs and rockets. The

F9F off Wonsan has 5" HVAR's and Ram antitank rockets, the AD (left) Rams and a 1000-lb. bomb, while the Corsair gets four 250-lb. frag bombs with proximity fuses





NO JOB TOO BIG

AND NO JOB TOO SMALL

ALTHOUGH its operations are geared to making pilots' lives safer and to insuring that the country gets the most for every defense dollar, few naval aviators and even fewer civilians know much about the Naval Air Material Center in Philadelphia.

This is partly because the Center concentrates on getting results instead of publicity. But it is also due to the fact that it would take a book to pin-point what NAMC accomplishes for the Navy.

The Center packs a three-pronged punch. Its Naval

Aircraft Factory develops and produces everything from catapults to arresting hook points. Its Naval Air Experimental Station tests and develops aircraft engines, structures, materials, instruments, photographic devices and safety equipment. Its Naval Auxiliary Air Station controls Mustin Field and provides quick delivery service to the Fleet.

The Bureau of Aeronautics, under whose control the Center operates, has only to indicate what it wants and NAMC does the job—be it large or small.



SHEET METAL SHOP—Aviation metalsmiths Bebringer and Wolfson work on the back of an R5D seat being formed by drop hammer



FACTORY ASSEMBLY and Test Shop—Aircraft mechanics Hibbs, Everist and Juriga put JATO installation in F9F Panther wing

THE NAMC PLANT, located on the eastern portion of the Philadelphia Naval Base, is valued at more than 65 million dollars. It includes 124 buildings, 50 of which are major installations such as hangars, laboratories and office structures, as well as some eight catapults worth over 17 million dollars.

The Center also provides logistic support for a unit, under the cognizance of Naval Air Technical Training, which trains personnel in catapults, arresting gear and flight deck and seaplane ramp handling of aircraft.

Commander of the Center is RAdm. Rico Botta, a naval aviator and aeronautical engineer. Capt. John W. King, former *Cabot* skipper, is his chief of staff, while Capt. Darwin M. Wisehaupt, Capt. Edward J. O'Neill and Cdr. H. R. Badger head up NAF, Mustin Field and NAES respectively. On their team are more than 5900 Navy and civilian engineers, technicians and factory workers, some of whom have literally grown up with naval aviation.

The Naval Aircraft Factory has been a going concern since 1917. Once a pioneer in building Navy planes, it now concentrates on designing, developing and manufacturing various types of aviation equipment and materials not easily built by civilian sources.

Focus today is on catapults and arrest-

ing gear. Spurred on by the demands of the Korean war, NAF now spends 37% of its total effort designing, developing and manufacturing BUAER ships' installations equipment. Modernizing catapults, arresting gear and crash barriers on the Navy's newly converted carriers accounts for a large chunk of its work.

THE FACTORY is no "Johnny-come-lately" to the ships' installations field. All of the powerful, pneumatically-operated, hydraulic engine catapults that launch the Navy's planes today from carriers all over the world are products of NAF development. So are the arresting gear and barriers—including the barrier adapter system for two-engined planes which allows the nose-wheel and propellers to pass over the arresting cable and then automatically lifts the cable to engage the main landing gear struts.

Now NAF engineers are driving to develop new high capacity catapults and arresting gear to handle the heavier and faster planes of the future.

The new catapults, which eventually will be installed on large carriers such as the 60,000-ton CVB *Forrestal* now under construction, have a radically different design so as to give more energy with less weight. Unlike present versions, they will be powder-powered.

NAF is also developing a new-type barrier, called a barricade, for use with any propellerless aircraft. This barricade catches the nose and wing of the plane and stops it.

The new catapults and barriers are being put to rigid tests every step of the way. To simulate actual launching of aircraft under different loading conditions, NAF utilizes dead loads, which it designs and builds specifically for this purpose. A typical dead load resembles a long flat platform mounted on oversized balloon tires, to which weights may be added to change total loads to be tested.

For testing its new-type barriers, NAF uses dead loads, configured to represent actual aircraft. In later tests of both barriers and catapults, actual aircraft are used.

NAF develops and produces catapult components such as all launching bridles and all release tension bars and tension rings. It also designs such things as blast deflectors for carrier decks.

Developing ships' installations equipment involves more than pressing a few levers. NAF engineers often have to devise special methods of manufacturing parts so that they will have necessary strength and will operate satisfactorily.

A heavy wire rope, for example, is required for use with arresting gear and

HOOKING UP for catapult shot—To get pre-carrier practice Air Reserve squadron from NAS Willow Grove uses NAMC catapult



TESTING EXPERIMENTAL barriers at NAMC—Dead load configured like aircraft is swung over on side after engaging barrier cables





INSTRUMENT SHOP—NAF production officer Laurich and G. Shaefer watch H. Haley check gimbal ring assembly for proper balance

for catapult towing. In this case, the Factory developed a differential heat treatment method of manufacturing swaged fittings (solid metal coverings for ends of the steel wire rope), which permits these fittings to be placed over the ends of rope $1\frac{1}{4}$ " to 2" thick as compared to the maximum $1\frac{1}{4}$ " thickness formerly possible with commercially-manufactured wire rope.

Similarly, it has developed a method of casting aluminum sheaves (pulleys used on catapults) up to 48" in diameter and 2" to 3" thick which will carry terrific loads.

IN ADDITION, NAF supervises installation of catapults and arresting gear on carriers.

It has regular "teams" of engineers and technicians available to iron out any "bugs" and to make sure that the installations are utilized correctly and effectively. These "trouble-shooting" teams are ready to go to carriers any place in the world at a moment's notice. Recently an NAF engineer flew out to carriers operating in the Korean fighting zone and helped them overcome certain difficulties on the spot.

On the spare parts manufacturing front, NAF also does a lively business. These spare parts not only are those required for ship's installations but include those for "orphan" planes, such as TBM's, SNJ's and others not under production at the present time.

They run the gamut from complex nose assemblies for F7F aircraft to simple washers for use on the vertical stabilizer frame assembly of TBM's.

For its work in turning out many "specialty" jobs which private contractors either do not want to do or are unable to do, the Factory is often called "the good right arm of the Bureau of Aeronautics". Here the fact that the Factory can turn out specialized items

on the double and at less cost than private companies (since it has necessary equipment and know-how already on hand), pays off.

To see how one of these "specialty" projects works out, take the case of the "bomb release hooks". At the outbreak of the Korean war, the Navy already had a workable hook but it would only carry a load of 500 lbs. For special tactical operations in Korea, the Marines needed hooks of the same design that would have an ultimate 20,000 lb. capacity. And they needed them in a hurry.

At this time the University of Pittsburgh was developing a 20,000 lb. capacity hook for NADC JOHNSVILLE. So BUAER had Johnsville turn over two or three of these experimental hooks to the Factory, along with pertinent data concerning their design and production. NAF took over from there.

Turning out the hooks on a production basis was a different picture. Heat treatment requirements for the experimental hooks, for example, needed more testing to be valid for production runs. Therefore, the Factory processed the hooks in batches of 80. It handled each group as a "pilot" (i.e. sample) run, keeping accurate data on just what heat treatment was given to each lot to try to determine a heat treating temperature which could be applied universally.

TO GUARANTEE the reliability of every single hook produced during this critical period, NAF tested it individually prior to its release to the combat forces. OK'd hooks were shipped immediately to the Fleet via air—sometimes in lots as small as 16.

By combining development with production in this fashion, the Factory managed to get the required number of hooks to the Fleet for use in combat in the time it would normally have taken just to establish heat treating criteria.



NAMC COMMANDER, RAdm. Botta with Capt. King (front) and Capt. O'Neill, Capt. Beardsley (now with BuAer) and Capt. Wisehaupt

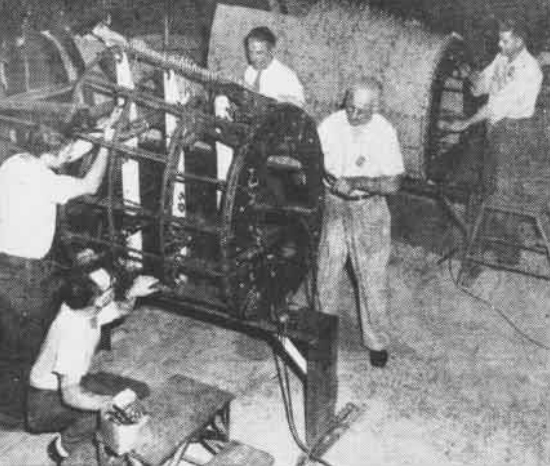
To accomplish the job, personnel at the Factory worked around the clock and key personnel were on hand practically 24 hours a day to evaluate results after each group was run through.

NAF got another job when BUAER found that heavier aircraft required constant replacement of their detachable arresting gear hook points. Here the problem was to develop stronger materials for the points without changing the general configuration.

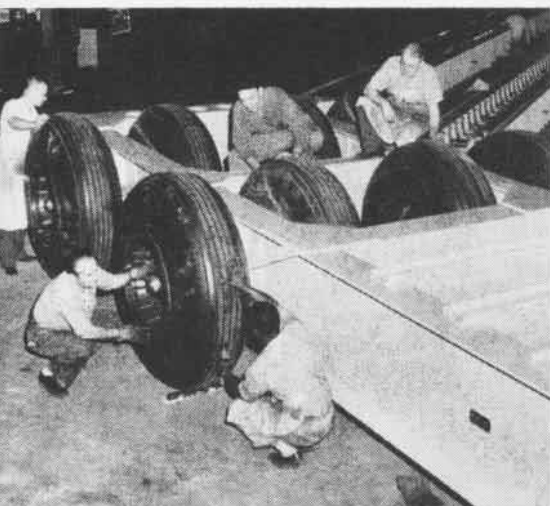
THE FACTORY accomplished this by applying colmonoy powder spray in processing the forged hook points—which means that it gave the hook points a surface treatment that made them many times harder than they would have been had they received a normal heat treatment. By reducing maintenance and change costs aboard ship, these new hooks will save considerable money. The Factory is turning them out at the rate of 80 a day and has already produced about 9,000.

Other typical specialty items NAF is now manufacturing include: an electronic test harness, specifically adapted for bench checking all types of aviation electronic equipment where elaborate shop facilities are not available; a ground control car (actually a mobile truck about the size of an office desk with a control console in front) being built for NADC JOHNSVILLE for eventual use by drone squadrons and guided missiles activities; and wooden models of various bombs being built for BUORD for eventual use in aircraft mockups.

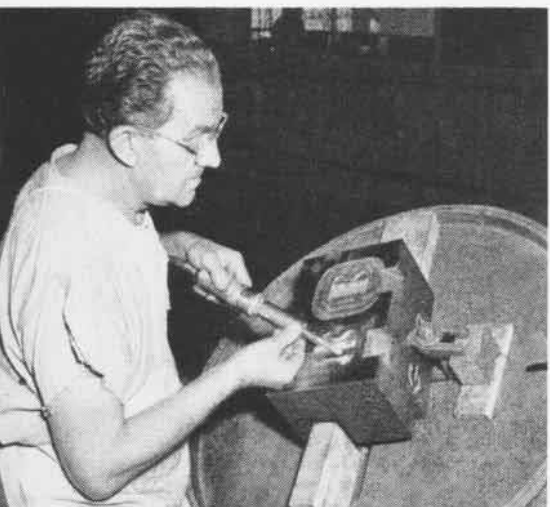
The Factory also gets into the act in a large way when it comes to parachutes and ejection seats. Since the outbreak of the Korean war, it has manufactured thousands of personnel, drogue and supply chutes for the operating forces. It does a regular business converting worn personnel parachutes into cargo chutes.



F7F NOSE envelopes being assembled by Rodolico, Myers, Obenland, Gerace, and Nelson



CATAPULT dead load gets checked by Farquahson, Crawford and Antman, Oslin, Young



MACHINE SHOP—NAF's Yaeger finishes impression in die blocks for barrier cable clamps



OF PARTICULAR interest to pilots are the new tab end finishings the Factory is now developing to prevent webbing ends on the parachute harness from fouling in the aircraft. Instead of being turned back four times to prevent slipping out of hardware slot, the new tab ends are given a "flair" finish. In other words they are widened at the end instead of thickened.

Working with the Aero-Medical Lab at the Center, which is developing a standard-type ejection seat for use with all jet aircraft, the Factory at present is building six experimental ejection seats for use with both seat-type and back-type parachutes.

Since the ejection guns used to fire off these seats are actual small catapults, NAF naturally has cognizance over them. The Factory, in fact, designs and builds all seat ejection guns for all Navy jet aircraft and right now has orders on hand for 2800 guns.

In addition, the Factory does a certain amount of work modifying Navy aircraft and then making up "change kits" so that other activities may effect their own modifications after the NAF pattern.

At the moment, the Factory is putting a JATO installation in an F9F, to enable Marine pilots to take off from small fields in Korea or from advanced bases. To effect this modification, technicians first tried placing the installation at various places in the wing and at various angles to determine the best location to put it so that it would not adversely affect the aerodynamics of the plane. Once the modification is made, the plane will be flight tested at Patuxent. After final approval, "change kits" containing necessary parts to effect the modification will be sent to other activities.

NAF is modifying an RSD for the Naval Research Laboratory by placing a large radome under each wing and installing a meteorological mast on the fuselage.

The Factory also overhauls aircraft instruments and assigns NAF numbers to all types of instruments and equipment designed and built to NAF specifications.

The major portion of the BUAER Industrial Reserve program for the defense effort has also been assigned to the Factory under the BAIR Department. It is now actively engaged in stockpiling, procuring and releasing to civilian manufacturers some 26,000 machine tools and industrial equipment units valued at more than 150 million dollars.

The "heads up" crew which operates the Naval Auxiliary Air Station, Mustin Field, contributes to the achievements of the Material Center all along the line.

Besides providing facilities where NAF pilots can test reconfigured planes and NAES pilots can try out new developments under flight conditions, the station services, maintains, houses and controls the planes assigned to NAES for experimental purposes. Mustin pilots even assist in the testing.

IF THE FLEET puts in a hurry-up call for special equipment such as catapult parts, NAAS instrument pilots are ready to airlift the equipment on a moment's notice. They fly "trouble shooters" any place in the Western hemisphere their services are needed. In addition, the station provides 90% of the administrative flying required not only by NAMC but also by ComFour.

In the matter of training, Mustin Field has an instrument program underway for all NAMC pilots and supervises individual minimum flight training for NAMC, ComFour, local BAR's and other local naval aviators. Another job involves the administration of all enlisted personnel assigned to NAMC, including those operating the NAF catapult sites and working in NAES laboratories.

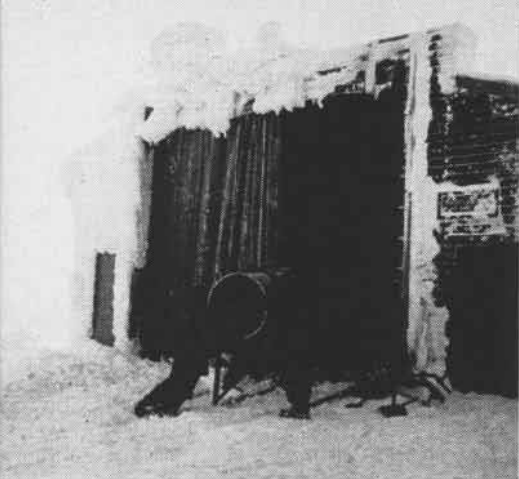
Each one of the six laboratories that make up the Naval Air Experimental Station at NAMC is making a valuable contribution in its own field. All aim to make sure that the Navy gets the best and safest aircraft and aviation equipment in the world. Although their activities cannot be covered in detail, a few highlights will give some indication of the scope of their work.

PRACTICALLY ALL engines used in naval aircraft today have been tested at the Aeronautical Engine Laboratory and owe considerable credit for their development to AEL evaluations. Originally set up in 1915, AEL today is still leading the field testing new or experimental aircraft power plants and their related accessories, as well as fuels and oils, for suitability for naval service. Lab engineers also collaborate with those in industry to develop new equipment.

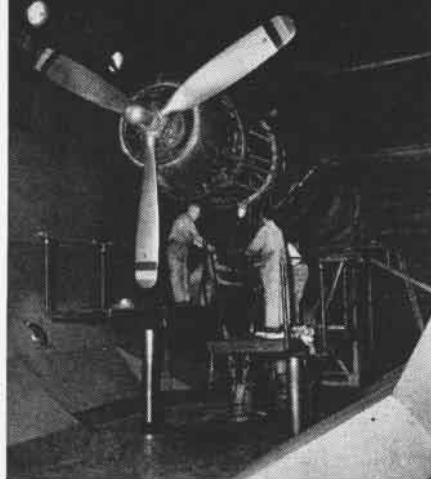
In addition to testing performance and durability characteristics of reciprocating engines, AEL tests all types of jet propulsion engines. In fact it is one of the few laboratories in the country equipped to test full-scale turbojet engines at simulated altitude conditions as well as at sea level.

For these tests, an engine, fully instrumented to provide data, is installed in an altitude chamber. (This chamber looks like a huge cylindrical metal tube). An extensive blower and refrigeration system supplies air at the desired altitude conditions during the test. Exhaust pumps remove engine exhaust gases and

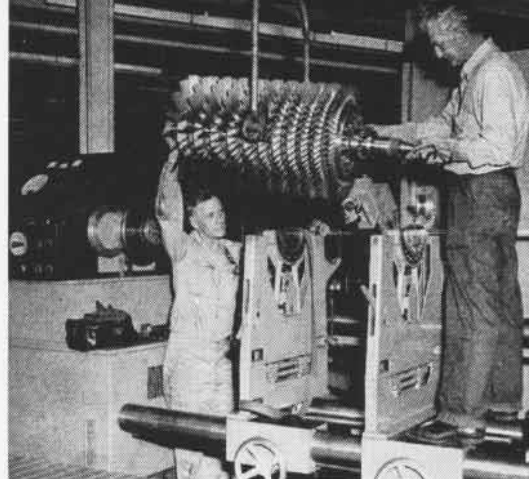
AIRCRAFT mechanics Giordano and Buck work on F9F tail in NAF assembly and test shop



ATOP MT. WASHINGTON—Test equipment is installed in the Navy icing test bangar



MOUNTING P&W R-2800 engine in test cell for endurance testing at Aero Engine Lab



LOWERING turbojet engine compressor section on AEL dynamic balancing machine for test

maintain desired altitude pressures. Altitudes up to 53,000' with temperatures as low as -67° F may be obtained, and engines may be tested up to simulated air speeds of 600 knots.

The Pratt and Whitney J-42 turbojet engine (used in F9F's) was tested up to 50,000' in the AEL's 84" diameter altitude chamber. Current altitude tests are being conducted on a new model Westinghouse J-40 engine and the Wright R-3350 "compound" engine, the first of its type to be calibrated at AEL.

AEL also works on various long-range projects. Here the engine anti-icing tests AEL is conducting for the fourth year atop Mt. Washington, New Hampshire, in cooperation with the Air Force and industry provides the outstanding example. Progress made in the gas turbine engine anti-icing field in the past three years is comparable to advancements in wing anti-icing made over a 15-year period.

Another typical AEL project is the one on "cold weather starting". In testing the P&W R-2800-30W engine (used in F8F's) in connection with this study, AEL managed to lower minimum starting temperatures from 30° F to -20° F by using a "dual" priming system which added priming at the carburetor to the original priming system at the intake ports. By using the original priming system and heating the fuel used for

priming, AEL also made successful starts at temperatures as low as -67° F.

To save time and money, AEL makes full use of electronic computers in solving design and development problems on jet engine controls.

THE AERONAUTICAL Materials Laboratory tests and develops materials—meaning textiles, chemicals, protective coatings, preservation compounds, rubber, plastics, sealants as well as hydraulic, pneumatic and safety equipment and mechanical components used on naval aircraft.

A current project involves comparing para-rafts and life vests, captured from the Red Forces in Korea, with standard Navy versions of the same size—to see if the Korean equipment has any improved features that might be incorporated in future Navy designs. The Korean para-rafts, however, appear to be made of lighter and flimsier material than ours, and to have a heavier and less efficient inflation gun. The Red life vest also appears inferior since it is not pneumatic but depends on a seaweed insert to give necessary buoyancy.

Driving to lick fire hazards that threaten Navy pilots, AML has assisted in the development of a continuous system to detect aircraft fires at their start, and is working on a lighter weight flame resistant fabric for flight suits. AML shares

credit for developing non-inflammable, water-base hydraulic fluids, which have passed hundreds of combat-test hours in Korea.

Typical of time and money savers which AML is developing is a non-foaming engine cleaner. This can be used with a high pressure spray. Then there is a two-part paint remover, which permits a diluent, suited to individual climatic conditions, to be added to a concentrate at the scene of operations.

On the metallurgical front, AML has recently evaluated alloys of titanium, developed by the Bureau of Aeronautics and it found that they have the potential strength of and are lighter in weight than spring steel and have the resistance to corrosion of stainless steel. The lab is also evaluating a new aluminum alloy, XA78S, which is reputed to have more tensile strength than the best aluminum alloy now in use.

Developing a particular compound often resembles the old put-and-take top game. To stop rain erosion on leading edges of high speed aircraft, for example, AML engineers evaluated and found suitable rubber paints. They discovered that these interfered with the aircraft's radar reception, so they took out the conducting pigment. But the resulting coating drew precipitation static. They then found that adding channel black to thin rubber coating per-

NAES TEST PILOTS Brown, Kenison, Fechtelkotter, Bain, Barnes, Peterson, Keller, Howell and McMonigle line up at Mustin Field



NAF SHIPS' installations developments at work with the Fleet—Here an AF books an arresting wire to land aboard the USS Essex





"LOOK NO HANDS"—Pilot Kenison takes life easy as autopilot developed by Aero Instruments Lab controls hovering helicopter



AERO MATERIALS Lab's DeGeambeardino and Silverman show Navy and captured Korean parafalls; Red version appears inferior

mitted this static to bleed off—and they had their product.

At the same time, they also developed another compound, which does not allow the precipitation static to form and which can be swabbed right over the paint during gassing operations. Now they are trying to make this compound in a wax form for greater permanency after application.

THE AERONAUTICAL Medical Equipment Laboratory aims to bridge the gap between what the plane can do and the man can do.

Take the matter of escape from high speed aircraft for example. In cooperation with the Parachute Experimental Unit at El Centro, AMEL is developing an automatic sequence for ejection seats which will work even if the pilot is injured. Delayed powder charges will be used to eliminate need for opening the lap belt, pulling the rip cord and the like. In the event that the canopy is jammed and cannot be opened, AMEL engineers are working out a means to fire the seat right through the canopy with a minimum of injury to personnel.

AMEL, of course, is a veteran in the ejection seat field, having designed the ejection seat catapult now used in all Navy jet aircraft. It has trained some 850 naval aviators in how to use the ejection seat via the famed 110' test tower at the Center. This indoctrination paid off during Fleet operations this past year. All nine pilots who had to use ejection seats for bailouts made successful escapes.

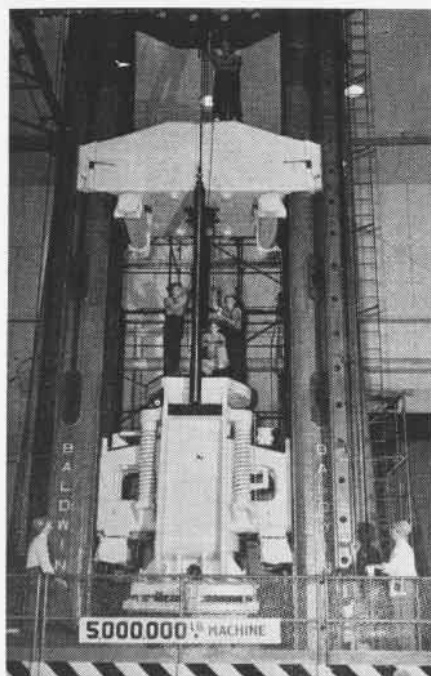
AMEL engineers are also investigating the effects of crash accelerations on the human body. Here they will utilize the HG-1 catapult at the Center, which can produce accelerations up to 30 G's. To test helmets, they have developed a device which measures what protection against crash forces a helmet provides. They have also developed a method for

testing how much a human neck can be stretched without breaking.

In the new-and-better parachute field, AMEL is now developing a para-harness which looks like a kind of fish-net union suit. Woven like a Chinese finger-puzzle (which tightens like a vise when you try to pull it from the top) the harness will allow the canopy-opening strain to be distributed over the whole body.

AMEL is particularly active in the field of aircraft lighting. In cockpit lighting, it is developing an extra-legible instrument panel. This features integral lighting for each instrument, use of clear type faces like Airport Semi-Bold and Futura Demi-Bold (which NA NEWS incidentally uses for its headlines), and special outlining for warning panels.

To give a higher level of brightness



SPECIMEN being installed in 5,000,000 lb. machine was pulled to bits at 2,500,000 lbs.

and more reliable information on attitude of an incoming plane, AMEL is also developing an installation of three separate signal lights with carefully chosen filters.

In the pilot survival field, the new exposure suit is only one of many developments the lab is working on.

THE AERONAUTICAL Structures Laboratory, like the Engine Lab, is primarily a testing and evaluation outfit, though it, too, does a certain amount of development work. ASL engineers have developed much of the lab's testing equipment—among the best in the country—and have pioneered new techniques for obtaining data, both in the lab and in the field.

In ASL tests, aircraft structures are forced to undergo "tortures" that no ordinary structure could withstand. To measure loads that can safely be imposed on the plane in flight, structures are placed in tailored-to-fit frames.

The suction action, which results from the airflow over the wing and which gives the lift, is applied to the structure by means of rubber pads which are cemented to the top surface. The rubber pads are gathered together by means of levers, and the load is applied to these levers by means of jacks. The magnitude of the loads being imposed is indicated by load measuring gages.

First the structure is tested up to limit loads; next to design ultimate loads. Surviving that, the structure is loaded until it breaks.

Structures are also "drop tested" in the lab to determine the effects of ground forces on the plane during landing.

The testing equipment defies description. To "drop test" a 59,000-pound structure, for example, a 70,000-pound lifting apparatus is required—and this is only part of the total equipment needed. Static test equipment is equally

elaborate, since here again the complete aircraft structure is usually worked on.

Structure components and materials are subjected to further drubbing in the lab's 5,000,000-pound testing machine. One of the largest of its kind in existence, this machine is capable of precision testing as well as power. Actually it looks like an elephant's guillotine.

Tests pay off in results. When landing strength difficulties on the F4U-5 were disclosed in service use, ASL data showed that the structure needed reinforcement around the landing gear attachment as well as a new strut metering pin. The necessary design changes were then made and today's F4U-5 is proving its sturdiness as a combat plane in Korea.

To get statistical data for new design criteria, ASL often undertakes general studies. Right now, it is obtaining information on types of landing gear used on carrier aircraft. A trained photographer, assigned to a carrier operating off Korea, is recording data on landing gear characteristics under battle conditions. Data are obtained via a "sinking speed" camera—a photographic method developed by ASL engineers.

A FIRST in aviation throughout the world is claimed by the Aeronautical Instruments Laboratory. This is for its helicopter autopilot—a major development in the field of aeronautical engineering.

Since helicopters lack the inherent stability of conventional-type aircraft and also have much higher stick forces (often 25 to 35 pounds at the grip) which makes it tiring for pilots to fly them for long periods, this automatic pilot is expected to open many new applications for helicopter usage.

An HO3S-1 helicopter, controlled completely by this robot pilot made its first successful flight at Mustin Field in September 1950. Tests are underway today to determine the reliability of the system under all conditions of flight. AIL is also working on a development to control automatically helicopter engine power and altitudes, as well as hovering with respect to a fixed geographical point at a fixed altitude.

Typical devices which AIL has developed include bank adaptors and capacitor fuel quality gauges, which are installed in all aircraft today, as well as an adapter which permits the improved G-2 compass system to be used with the P-1 automatic pilot.

At present, it is developing cruise efficiency instruments to tell the pilot how many miles per pound of fuel he is getting at a given time. Now being tested on F9F's, these instruments, in fact, are adaptable to any type of airplane.

At high altitude and high speeds, aircraft thermometers register temperatures considerably above true air temperatures due to friction and compression of air. To give the pilot more accurate readings, AIL is developing a vortex thermometer for installation in the aircraft wing.

In this device, a thermometer is placed in the center of a metal tube, built to permit the outside air to pass through in a corkscrew motion. The air practically stands still at the axis of this tube and thus the temperature which the thermometer registers at that point is virtually the same as the true air temperature outside.

IN ADDITION to furnishing an assortment of photographic services for the Center, the Aeronautical Photographic Experimental Laboratory is turning out many devices guaranteed to produce results both in combat and in the darkroom.

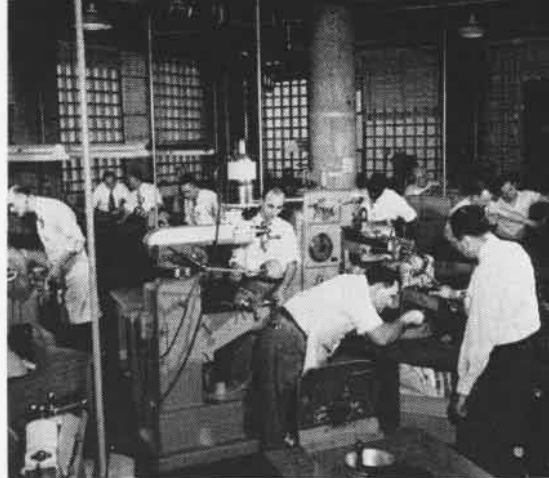
A typical development is the electronic flash enlarger—a high intensity discharge lamp which cuts exposure time for producing enlargements to 1/5000 of a second. (Conventional equipment often takes 10 seconds.) This lamp is used over the enlarger instead of a plain bulb and has its own power unit. Particularly designed for shipboard use, it enables enlargements of uniform print quality to be made at the rate of 21 per minute.

Then there is the ADOG—a compact little device for use with a standard gun camera, which keeps the camera focussed on the target as the aircraft is pulling out of its rocket-firing dive. As a result accurate damage assessment pictures may be obtained.

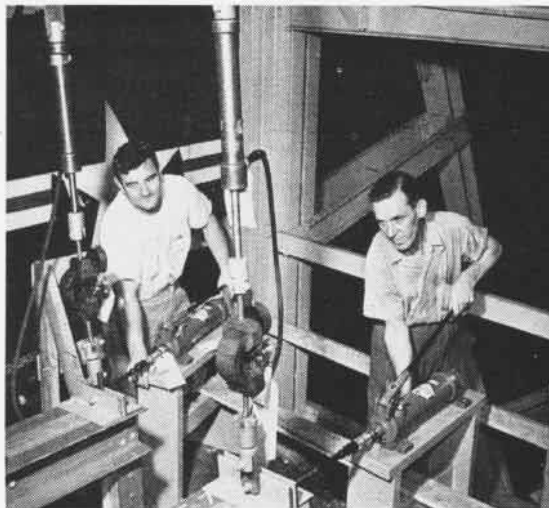
For rapid delivery of front line position photos to headquarters, APEL has developed an aerial delivery shell. The shell, which may be suspended from bomb racks of fighter aircraft, has provisions for storing and ejecting from one to four film parachute packs. The ejection capsule has three sections, the nose and tail being made from a Beechcraft auxiliary gas tank and the center section from a single sheet of aluminum rolled to fit.

APEL is now in the process of developing a continuous printer, designed to solve service needs for high speed processing and reprinting. If present plans work out, this device will print 16, 35 and 70 mm film on rolls of sensitized paper and will automatically reproduce the varying densities of the negative. (APEL devices mentioned here are not in production and should not be ordered by activities until they appear on the standard stock list.)

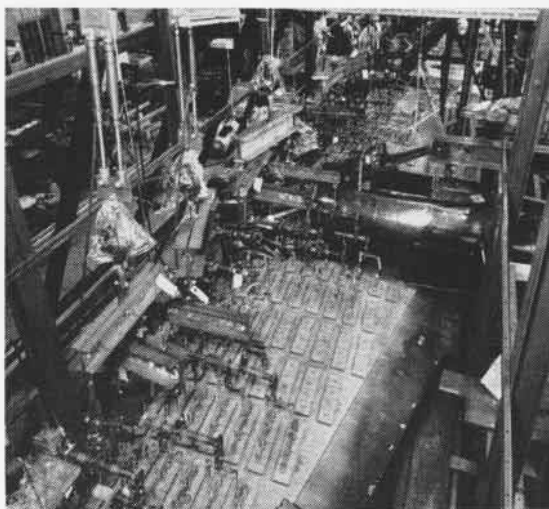
AND LAB'S Rogin, Richardson and Nickerson check strain gage readings during the test



AERO PHOTOGRAPHIC Experimental Lab personnel hard at work in prototype shop



ASL'S DONAGHY and Waugh apply load to airplane wing with hydraulic tension jacks



AIRCRAFT STRUCTURE in frame for loading test, note tension pads on wings and levers





GRAMPAW PETTIBONE

Check That Switch

If I had a buck for every time a pilot has tried to take off in an SNB/JRB with his landing gear switch in the "UP" position, I believe that I could take a week off and go fishing.

However, with Congress investigating all sorts of shakedowns, I can't find a legal way to extract the dollar bills—guess I'll have to go right on reading accident reports.

From discussions with pilots who have tried this maneuver, I can assure you that it leads to plenty of trouble. As soon as they get enough speed on the take-off run to remove a little pressure from the oleo struts, the plane settles on its belly. The conversation then runs something like this:

Pilot: "Shucks!" (See note)

Co-pilot: "Shucks!" (Ditto)

Pilot: "I didn't touch it."

Co-pilot: "I didn't touch it."

Both: "Maybe it was 'UP' all the time?"

From then on they spend a considerable percentage of their time trying to figure out what to tell the Aircraft Accident Board and the local Naval Aviators Disposition Board. This is getting increasingly tough because these sharpies have heard all the excuses.

Play it safe. Check the position of the landing gear switch before you start the engines.

Editor's Note: In case you think the conversation didn't run exactly like that, neither did Gramp. There are some words that are never, never printed in respectable magazines.

Powerful Slip Stream

A pilot who was ferrying a PBY-5A just out of overhaul writes the following account of a near accident:

"On entering the traffic pattern at NAS DALLAS, Texas, I was asked to make an extended downwind and base leg to come in behind a B-36 which was making a GCA approach. I patterned my approach so as to fall in behind the B-36 on the final with at least a mile separation.

"The B-36 continued its approach to about 150 feet above the ground, re-applied power, raised the gear and flaps, and climbed out.

"At approximately 75 feet above the ground and indicating 80 knots as I

commenced my landing flare out, the B-36 slip stream hit the aircraft causing it to go into at least a 60 degree bank to the left. Full left throttle was used in the recovery and immediately another slip stream blast caused a bank of similar dimensions in the opposite direction. A wobbly recovery was effected, a go-around executed, and a normal approach and landing made."

After the incident, I talked to a VR-32 ferry pilot who had witnessed the occurrence. He related a similar incident which occurred when he was following a C-124 in for a landing."



Grampaw Pettibone Says:

Allow yourself plenty of room when landing or taking-off behind one of these big babies, because they can sure get you into a lot of trouble.



"Uncomfortably Tight"

At an altitude of about 100 feet right after take-off the engine of the F6F pictured here suddenly quit. The pilot had started a clearing left turn and had only time to glance at the fuel pump switch and the gas selector valve. Both were positioned correctly. He made a slight right turn to line up with the remaining runway.

The F6F went through the air station boundary fence at a speed of about 70 knots. The pilot had sufficient directional control to avoid hitting a tree head-on and to miss a few cars and pedestrians as he bounced across a busy highway. Beyond the highway he slid 750 feet through a tide-water marsh land, before the wheels dug in and flipped the F6F on its back.

The pilot was dazed, but not injured, and managed to extricate himself from the cockpit unassisted. He states that he owes his life to the fact that his shoulder straps were "uncomfortably tight" when he made this particular take-off.

A Rough One

Over El Paso, Texas on an IFR plan from Tucson, the pilot of a PV-2 refilled his flight plan to continue on to Dallas VFR. ATC approved this change and informed the pilot that he would be able to maintain VFR to Dallas.

About 10 minutes out of Abilene, the plane approached a line of thunderstorms. The pilot asked the radar operator to give a heading that would take them through the lightest spot between the storms. The plane was at an altitude of 3000 feet. Here are some statements of what happened in the next few minutes: The pilot says:

"Ten minutes out of Abilene we approached a series of thunderstorms. We had the radar operator give us a heading which would take us through the lightest spot between the thunderstorms. At this time we were at an altitude of 3,000 feet.

"We flew through a rain shower area maintaining contact and the picture ahead was about the same. Suddenly we encountered heavy rain showers accompanied by pellets of hail. This was followed immediately by heavy hail accompanied by violent turbulence. Only one instrument, the gyro-horizon, appeared to be reliable. The air speed fluctuated from 80 to 210 knots.

"The altimeter dropped to 1,750 feet indicated and went up to 3,500 feet in about the time it takes to write this sentence. The terrain is 1,710 feet in this area. The air speed and altitude extremes and the hail and turbulence lasted from 30 seconds to one minute in the most critical portion of the cloud. It was impossible to hold a constant heading, consequently our heading varied from 000 to 090 degrees. As we broke out of the clouds we were climbing and on a 090 degree heading."

A Passenger Says: "Approximately 10-15 minutes east of Abilene the ceiling had lowered considerably but we were in good VFR weather. I was in the after part of the ship and could not see ahead but I noted that we entered a light rain. Almost immediately it felt as if the ship were flying apart and sounded like it when hail broke out the astro-dome and gun turret and pounded the wings and fuselage. Plexiglas and water flew into the ship and the co-pilot said that his windshield was ready to break out. The turbulence was terrific so I wedged myself in the after section of the plane facing the port side. Next thing I saw trees and the ground flashing by and we were in a dive of about 70 degrees from the vertical with a heavy list to port. I began yelling 'Pull up' and heard someone else say the same thing and before we did pull up we were down to around 50 feet or less from the ground."

Other Crewmen say: "All at once the plane was struck by hail and immediately we were on IFR flight conditions, and the plane lost about 1,000 feet immediately. The co-pilot's windshield was shattered in two places. The astro-dome and turret plexiglas gone. The two pilots immediately both flew the airplane. We were pitched around so violently that it required both pilots to hold the plane in some semblance of flying condition. Visibility was zero. We decided to go straight through. Radar reported clear about three miles straight ahead. As soon as we entered cloud we pulled back the throttle to about 25 inches because the air speed jumped to about 210, in the next instant it was about 80. We poured the power to it and hauled back on the yoke. We were thrown dangerously close to the deck. We kept the gyro-horizon on the miniature airplane centered and let the plane gain and lose a couple thousand feet at a time. Radar reported clear spot seemed to stay stationary. Finally broke into the clear again. During time of the hail it sounded like gun fire and I thought the engines were going to quit. Seemed like we were in the soup for about an hour. After breaking out we reported hail showers to Ft. Worth Radio. They sent a special on it, first hail reported in the area."



Gram paw Pettibone Says:

"Honest, officer, I didn't start it. I was just sitting in the YMCA writing a letter home to my grandmother when this big lug crept up and slugged me!"

"Oh, Yeah", well next Sunday you fellows had better each put an extra dollar in the collection plate, and next time you see a line of thunderstorms ahead when on a VFR flight—go under, go over, or go around, but don't go through.

Hot On The Bottom

For a good many years I've been preaching that there are just three things you can do when an airplane catches on fire in flight—put the fire out, jump, or land *immediately*. Here's a recent case where the pilot chose the last alternative and did a mighty slick job of it.

Shortly after take-off in an F8F-2, the pilot reduced power to 32 inches and 2200 RPM and started his climb-out over San Francisco Bay. The tower called him a moment later to report that the starboard landing gear had failed to retract. The pilot reduced speed and turned back towards the field while completing the procedure of raising the gear.

He had just succeeded in getting his gear up and was at an altitude of 2500 feet when he had a complete power failure. To complicate matters further, the cockpit filled with smoke and fumes.

The pilot quickly turned his oxygen regulator to the 100% position and headed towards the field for a dead stick landing. Although he could not see what was happening at this time, the aft underside of the fuselage of the F8F-2 was on fire. He gave three hard pulls on

the release handle for his drop tank, but it refused to jettison.

Concentrating on reaching the field and making a good dead stick landing, the pilot could not tell how much of his plane was burning. Actually the fire was so severe that his luggage, which was stowed in the belly compartment could not be located after the accident. It was either entirely consumed by the fire or fell out when the bottom of the fuselage burned away.

Correctly judging that he would not make the field if he lowered his flaps, the pilot left them in the retracted position. He cut all switches and waited until he was certain of reaching the end of the runway before lowering his gear. The landing was good and the pilot hastily abandoned the plane at the completion of the roll out.



By this time the fire had burned itself out, but the pilot must have been surprised when he looked at the area back of the cockpit. The damage report states that 50 to 75 percent of the underside of the fuselage between the wheel wells and the tail wheel was completely burned away.



Gram paw Pettibone Says:

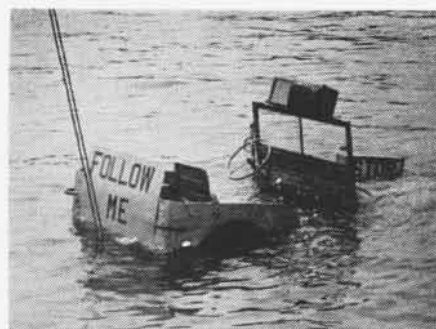
Shades of Walter Mitty! I think this fellow should have assumed a nonchalant air when the fire truck arrived and said, "It's nothing much, fellows, I put it out myself."

He certainly did a swell job of handling an emergency fraught with many dangers. The plane is a strike, and in retrospect it looks like it would have been safer to bail out. However, the pilot was not in a position to see how much of his plane had burned away, and he took quick action to provide himself with plenty of oxygen.

The maintenance folks took the engine apart and found that all articulating rods and the master rod were sheared from the crankshaft. Two cylinders were split half way up the cylinder barrel and there was a good size hole in the main case. Oil flowing through this hole ignited and fed the fire until the engine oil was exhausted.

Initial engine damage may have occurred during starting. The plane had been on the ground for about two hours, and the prop was not pulled through prior to starting the engine.

The failure of the drop tank to jettison was caused by a loose clamp on the cable.



Fortunately the F6F Pilot Didn't Follow:

The driver of the "Follow Me" jeep pictured here had failed in three attempts to pass the examination for an operator's permit. His immediate superiors were aware of the fact that he had no operator's permit, but allowed him to operate the jeep due to a shortage of qualified drivers.

Shortly before this picture was taken, he cut in front of a taxiing F6F-5 without giving the pilot any warning signal. When he disappeared into the area of vision blocked by the engine, the pilot applied brakes and put the F6F on its nose.

The rocket tail on the starboard wing of the plane struck the rear of the jeep lightly. When the driver saw the impending collision he jumped from the jeep leaving it in gear. After a short driverless run, the jeep plunged through the cable barricade and into the bay.



Gram paw Pettibone Says:

If this doesn't prove anything else, it at least shows that the folks giving the driver's tests knew what they were doing. The damage to the jeep was only \$250, but a new prop for the F6F will cost about seven times that amount.

You'll be happy to know that this was one taxi accident in which no blame was assigned to the pilot.

Dismal Thought Dept.



If you're tempted to rely on the other pilot's navigation, remember:

- He may make a serious error.
- You may become separated.
- You may discover that he was depending on *you*.

Saved Pilot Hangs by Toes



DECK CREWMEN ON ORISKANY RUSH TO SAVE MCGARVEY, HANGING BY TOES, HIS HEAD DOWNWARD

USS ORISKANY—One of the weirdest helicopter rescues in Navy history was racked up by this carrier on 18 July while cruising in the Mediterranean.

Lt. Jim McGarvey was piloting his *Banshee* fighter in the traffic pattern preparing to land aboard. On the final turn his plane suddenly lost flying speed. Within seconds it crashed nose down into the water and disappeared.

McGarvey doesn't remember much about getting out of the cockpit, but in a few moments he was on the surface. The ship's planeguard helicopter, flown by Leroy L. Barton, an enlisted pilot, was on its way to him. In the rear seat of the pinwheel, crewman Lewis M. Hewitt was preparing the hoist and harness for what should have been a routine water pick-up.

But for McGarvey, things were not so routine. He was dazed from the whack on the head that probably would have been fatal without his crash helmet. His left shoulder was numb and almost useless, and his right thumb was

broken. He could not inflate his Mae West life jacket or get his oxygen mask and crash helmet off.

His parachute seat pack still was strapped on and helped keep him afloat, but in a face down position. While he struggled with these problems in the water, the helicopter was over him and lowering the harness. He managed to get his injured shoulder into the harness and was hoisted almost to the cockpit. He lost his grip, however, and dropped 50 feet into the water. This might well have been the end of things for McGarvey, but by that time one side of his Mae West was inflated. This and the parachute pack kept him afloat. The harness was lowered again, and this time he got his legs through it and locked his feet together.

Hanging by his toes, he was hoisted to where his feet were level with the cockpit. Crewman Hewitt then stretched out on the floor of the cockpit, reached out and grabbed McGarvey's legs.

No one remembers much about the few minutes it took to get back to the ship, except that McGarvey recalls that he got very sick and his crash helmet was filled with sea water (second hand). Hanging upside down like that, his helmet nearly choked him.

It was a tricky job for the helicopter and for those on the flight deck to ease him down while the plane hovered, but soon he was in a stretcher and on his way to the ship's hospital.

The next thing he remembered was that the doctor who checked him over

told him, "Hanging upside down like that really did you a lot of good. You got rid of most of the sea water that we would have had to get rid of anyway."

Blimps Win Efficiency "E"

Shenandoah Survivor Sees Ceremony

FAIRWINGS, ATLANTIC — For the first time in history the Navy recently awarded the battle efficiency "E" to an airship squadron — Airship Squadron Two — at ceremonies near Brunswick, Ga. Probably the most pleased spectator was retired VAdm. Charles E. Rosendahl, often called the "father" of airships in the American Navy.

Adm. Rosendahl retired in 1946 after a 32-year naval career. He was navigator of the ill-fated *Shenandoah* and senior survivor when it crashed in a storm in 1925. He was the Navy's observer aboard the German dirigible *Graf Zeppelin* in 1928 and 1929.

This was the first peacetime year the blimps reached sufficient strength to compete for the battle efficiency "E", meeting the exacting standards for all-around efficiency in anti-submarine tactics. Cdr. F. N. Klein, who commanded ZP-2 at Lakehurst and at NAF Glynco and now is on the staff of CINC-LANT.

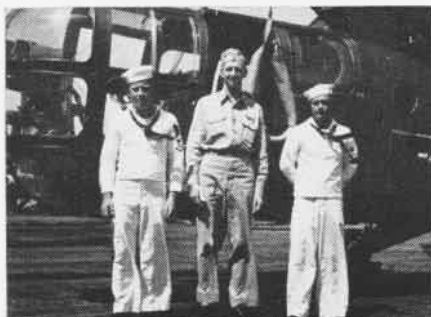
Drillers Advertise NavCads

Pensacola Cadets Appear Before Man

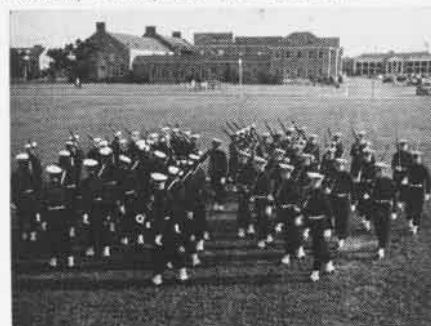
NAS PENSACOLA—The naval aviation cadet preflight drill team from this station will make 10 appearances during halftime activities at some of the country's top intercollegiate football games this fall.

It is expected the team will appear before more than a half million fans, with millions more hearing about them via radio and television. The team was reactivated this fall after a year's layoff and advertises the naval aviation cadet procurement program widely through its activities.

This year the team has or will appear at games at Gainesville, Fla.; Columbus, Ohio; Manhattan, Kan.; Miami, Fla.; Houston, Texas; New Haven, Conn.; New Orleans, La.; Durham, N. C.; Austin, Texas, and Little Rock, Ark.



MCGARVEY (CENTER) WITH HEWITT AND BARTON



MILLIONS HEAR OF NAVY THROUGH DRILL TEAM

KOREAN AIR WAR

In the Frying Pan

"Operation Rescue" almost became "Operation Barbecue" for a Marine flier in Korea when he found himself the target of U. S. planes.

Capt. Dellwyn Davis, a forward air controller with ground troops, went by helicopter to the scene of a crashed F-51. He found the plane had belly-landed in a rice paddy. The pilot, unhurt but shaken up, was in a ditch nearby. The pinwheel pilot took the man to a first aid station while Davis stayed by the downed *Mustang* to remove some secret instruments from the cockpit.

As he was doing this, the rest of the four-plane F-51 flight returned and began firing rockets at the plane to destroy it. The startled Marine realized the *Mustang* pilots planned to destroy the plane, and that meant napalm, which is pretty hot stuff.

Rushing out on the wing, he tried to wigwag the fighters overhead, but to no avail. Just then the helicopter came back. With a friendly waggle of their wings, the enlightened F-51's flew off. Wiping his brow, Davis returned with the helicopter and arranged for a patrol to guard the wreckage until it could be burned.

Bounce to Safety

Using a technique which works sometimes for pilots in distress, Capt. Thomas E. Mulvihill saved his F7F from destruction by bringing a stubborn landing wheel down by a series of high speed "bounce" landings in Korea.

Since he had a rocket under his wing which he could not drop, Mulvihill did not dare fold the wheels up and make a belly landing for fear of blowing up the plane and himself. He either had to bail out over a nearby bay or get that partially-lowered wheel all the way down and locked.

Using the system publicized by NAVAL AVIATION NEWS, which enabled



BANSHEE F2H-2 fighters appeared in the Korean war for the first time in August when the famous old carrier *Essex*, now modernized, brought F4U's, F9F's, AD's and Banshees with it

a number of other pilots to save their planes, Mulvihill made a number of high speed passes on the field, bouncing the plane on the good wheel, trying to jar the other one. After a number of these dangerous maneuvers, which require split-second timing and faultless control, he succeeded and made a good landing.

Photos by Night

A rugged piece of photo-delivery work, involving 360 miles of night flying, a flashlight and parachute, was done by Capt. Lee R. Miller, a First Marine Air Wing pilot in Korea.

During the day 150 photos were taken of new enemy positions facing the Marines in Korea. The plane returned to

a South Korean base where the negatives and prints were developed. Capt. Miller, despite his unfamiliarity with the terrain, volunteered to find the Division command post in the dark and drop the photos by parachute.

He located the CP on a map and found it in a canyon lined with high mountains. Attaching a small pen-type flashlight to his bundle of pictures, he climbed into his F7F photo plane and headed for the front.

By radio, he contacted ground forces and arranged for an illuminating grenade to be fired to pinpoint his drop. Turning on the flashlight, he dropped it and the precious pictures over the side as his plane sped past the light point.

NUMBER ONE military target in Korea these days is Wonsan on the east coast; Lt. (jg) Herbert Pickartz and Ray H. Anthony in F9F's



SMOKE AND rubble are all that's left of key Communist jet airfield on Yala at Sinniji, area, after Marine Corsairs had plastered it





MAINTENANCE crews aboard the *Bon Homme Richard* refuel Panther jets for another strike as ordnancemen stand by with HVAR's and Ram 5" rockets, the latter for piercing Red tanks

The last he saw was the light flashlight still swinging slowly from the floating parachute. Two days later he got a letter of thanks from the general stating the photos uncovered important enemy targets.

Official Red Tape

Does this sound familiar?

Some Marine helicopters were being delivered to Japan, disassembled, in big transports. When the plane landed, M/Sgt. Frank W. Scroggs tried to get a bunk for himself and his four mates at Haneda's transient crewmen's barracks.

Since the four Marines were not the crew of the transport, the Haneda duty clerk officially proclaimed they were not entitled to "sack in" there. They would have to take a long ride to a neighboring base to sleep.

Scroggs objected by the clerk said only men whose aircraft were on the flight line could rate bunks. "Show me your aircraft and we'll let your men sleep here," the clerk condescended.

SUNBURN HOUR aboard the *Boxer* as crew relax between strikes, some check F4U



With a triumphant grin, the Leatherneck pilot led the clerk to the cargo plane and pointed to the crated helicopters. His men slept well that night—in the transient crewmen's barracks.

One Squadron's Mark

Navy carrier-based squadrons are combing Korea for targets and furnishing close air support for Army and Marine ground units. A typical record, reported by VF-63, covers its fighting while aboard the *Boxer*, *Valley Forge* and *Philippine Sea* from August 1950 to June 1951. It's one squadron's work on 1055 sorties.

2,520 confirmed troop casualties
11 tanks destroyed or damaged
27 gun positions damaged or destroyed
50 vehicles destroyed
18 supply, ammunition and fuel dumps destroyed
1,156 troop shelters destroyed
450 buildings destroyed
49 buildings damaged
1 locomotive destroyed
146 railroad cars damaged or destroyed
45 bridges damaged or destroyed
16 warehouses destroyed
114 oxen and horses killed
5 junks destroyed.

VF-113'S CORSAIR with 107 missions, with Fairchild, O'Neil, McKnight and Patterson



British Flag Waver

USS SICILY—Aboard this jeep carrier, pilots were astonished one day to see a blue-clad figure with a jaunty British cap waving the landing signal officer's paddles.

Lt. W. T. R. Smith RN visited the *Sicily* when it and the *HMS Glory* operated together in the Korean battle area. Accepting the invitation of the LSO, Capt. Clayton Ingraham, USMC, to try his hand on the platform, the Royal Navy LSO brought in his first *Corsair* piloted by 2nd Lt. Bruce Clinigan.

Coached by LSO Capt. Walter Panichson, while Ingraham manned the radio, Lt. Smith had no trouble bringing the *Corsair* aboard. The Englishman



BRITISH LSO Smith from *HMS Glory* tries his hand with landing signal paddles on *Sicily*

commented that the approach was much tighter than the approach of his English pilots who are flying planes with a greater stalling speed. Capt. James Thach, skipper of the *Sicily*, congratulated Smith on his feat.

Rough Flying

With four feet of his wing gone from a midair collision, 1st Lt. Robert H. Wilson managed to fly his *Corsair* back to friendly territory in Korea before he bailed out and landed in a river.

DECK REPAIRS aboard *Bon Homme Richard* replace deck planking torn by plane propeller



The other plane crashed and the pilot was killed. Wilson tried to speed back to safety but his *Corsair* nearly spun out of control. When he slowed down, the plane would start to roll over.

Realizing he could not slow down enough to land, he jockeyed the plane past the 38th parallel before he bailed out. A helicopter flown by Capt. Clarence W. Parkins picked up the soaked Wilson from the water a few minutes later.

Team of Pilots

A passenger became pilot of a small Marine observation plane when enemy bullets ripped into the flyer's leg while on a recco hop over central Korean lines.

In the back seat of the *Grasshopper*, 1st Lt. Edward B. Keyes assembled the control stick and took over the plane, radioing another OY in the area to escort him to the emergency field.

Noting the blood flowing profusely from the leg of the pilot, Capt. Alan G. Bateson, Keyes held the stick with one hand, removed his belt and tied a tourniquet around it while Bateson kept the plane steady.

On final approach, Bateson took over the controls, but because his right leg was useless, Keyes followed through on the foot controls and the team made a perfect landing.

Take Her Up

How would you like to solo the first time you got in the cockpit of a plane?

Marine pilots in Korea were doing it when they got some Sikorsky helicopters.

Previously they had been using only Bell pinwheels, but the squadron commander, Maj. David W. McFarland decided to check them all out on the Sikorskys as well. In regular helicopter training, student pilots make their early flights in planes with dual controls.

However, the HO3S's in Korea had no such facilities, so the Bell pilots just climbed in, checked over the controls and took off. Ten hours of soloing and they started flying tactical missions over the rugged mountains.

Much at Steak

"Ransom" on a pilot usually costs a freezer of ice cream, but Marine Captain Russell G. Patterson was "rescued" from his Army captors with 100 pounds of steak.

Shot down behind the lines in Korea, Patterson was rescued by an Army helicopter. The 'copter men refused to return him to base until his squadron mates came through with the chow. Patterson's only beef was he wasn't worth his own weight in beefsteak.

1,500 Lives

Mercy missions totalling 1,500 were celebrated near central Korean front lines honoring VMO-6 helicopter men of the Marine Corps who have saved that many wounded infantrymen and pilots.

In honor of the occasion someone drummed up a cake, not usually seen around battle areas (see photo, right). BGen. Thomas J. Cushman, First Marine Air Wing commander, in the center handled the first piece to Capt. Frank R. Wilson, who flew the 1,500th mission while Maj. David C. McFarland, squadron leader, looked on.

For more than 10 months, the squadron helicopter and *Grasshoppers* have been performing rescue missions for which they were not intended nor equipped. They were supposed to be the eyes of the ground troops. But when they landed in South Korea, it soon became apparent much of their flying would be to rescue downed fliers and evacuate wounded men.

Since then 48 fliers have been rescued from behind enemy lines, at sea or near the front lines in friendly territory.

He's Been Around

Probably the most experienced carrier aviator flying in the combat zone is Cdr. Harold N. Funk, leader of Air Group 102 aboard the *Bon Homme Richard*.

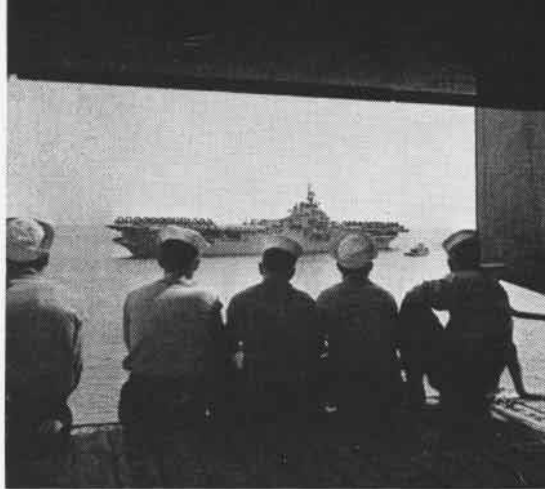
During his 14 years in naval aviation, he has flown 5,000 hours in single-engine aircraft and has probably made more carrier landings than any active aviator in the Navy today. He is head of four Reserve squadrons which were called to active duty in July, 1950. Before that he was at NAS PATUXENT RIVER as a test pilot.

During World War II, he shot down six Japs in one day at Leyte Gulf and won the Navy Cross. Flying in combat today, Cdr. Funk flies both *Skyraiders* and *Panther* jets.

Comparing Korean operations with World War II, he said "In contrast, where we'd strike hard and then run, we now sit off the Korean coast and fly strike after strike. This goes on day after day. The pilots, plane crews, ordnancemen and ship's company do a terrific job and have shown amazing endurance. As a result, the pressure on the enemy has been terrific."

In the photo on the right, Capt. Cecil B. Gill, commanding officer of the carrier, is talking to Air Group 102's leaders LCdr. C. E. Oveland of VF-781, LCdr. D. L. Watts, VF-874, LCdr. J. C. Anthony, VF-783, Cdr. Funk and LCdr. H. W. Wiley, VA-923.

CAPT. GILL of *Bon Homme Richard* confers with Air Group 102's leaders off Wonsan



CREWMEN ABOARD newly-arrived CV Essex at Yokosuka watch Princeton sail home



FANCY 'birdcage' for air officer Smith, assistant Ruffin aboard the *Bon Homme Richard*



CELEBRATING 1,500th evacuation of wounded in Korea, VMO-6 helicopter men cut up cake





WHEN A CORSAIR from VMF-323 came aboard for a landing on the CVE Sicily it still had three HVAR rockets hanging on its rails which refused to fire and which could not be jettisoned. When the F4U was jerked to a stop by arresting wires, the three rockets came off the rails and went slithering down the deck. They did not ignite and did no damage.

Record Helicopter Rescue Pinwheel Goes 90 Miles to Save Pilot

VU-1, KOREA—What is believed a record-breaking distance rescue by helicopter was chalked up by Unit Nine on 5 September when 1st Lt. Van Der Bos of a South African Air Force fighter-bomber squadron was saved 75 miles behind the North Korean lines.

The unit was operating off an LST off the North Korean east coast at the time. A message was received that a UN pilot was down 35 miles northeast of the capital city of Pyongyang. Lt. Harold F. Snowden, with Wm. S. Covington, ATAN, as crewmen, left immediately for the scene. Ironically, a jet fighter was the only plane available to escort the helicopter to the downed pilot's position.

Fuel shortage forced the jet to return to base before the helicopter reached the objective. Lt. Snowden fought violent wind currents in deep, narrow valleys and dodged high mountain peaks to reach the pilot, standing by his still burning F-51.

A RESCAP of his squadron's aircraft were orbiting him and furnished cover when the helicopter landed. Lt. Van Der Bos' first remark was, "I say, ole boy, is this the chopper for me?" Total air line distance to the downed pilot was 90 nautical miles. This, coupled with the return flight, is believed to be a near distance record for a successful rescue behind enemy lines by an HO3S-1.

Three other pilots have been rescued recently by one pilot of the unit. Lt. (jg) P. L. Working of VF-53 on the Essex was picked up by Lt. William C. Dixon and crewman Joseph H. Daly, AD1. Lt. William L. Killingsworth of VF-871 from the Princeton was fished out of the water by Dixon in a North Korean port. A third rescue by Dixon was

Lt. Robert T. Walker of VA-702, off the Boxer, who bailed out of his burning plane in enemy territory. Dixon and 1st Lt. John J. Roothoff, his "crewman", flew in under enemy small arms fire to land in a small field and rescue Walker, who was keeping the enemy at bay with a .38 pistol at short range.

Lt. Roothoff was a naval gunfire air spotter attached to the USS Toledo. He was crewman on another occasion when the same Lt. Walker was rescued by another unit of HU-1.

Pilot Flying Time Change Blimp Pilots Reduction Not So Great

Calling all aviators!

Effective for the fiscal year started 1 July 1951, flight time required for individual training has been changed.

OpNote 3710 modifies flight pro-

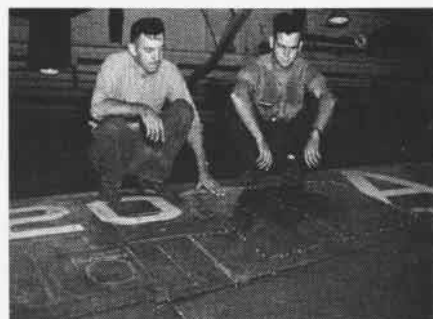
iciency requirements of ACL-80-49 as follows:

HTA Pilots—80 hours pilot time as first pilot or co-pilot, of which 15 hours will be night time; and 20 hours individual flying time as co-pilot, dual pilot or special crew. Pilots attached to squadrons flying single piloted aircraft not required to obtain 20 hours individual flying time stated above where facilities are not available.

LTA Pilots (1340 designation)—48 hours in HTA aircraft as first pilot or co-pilot and 50 hours in LTA aircraft, of which 20 hours will be as first pilot or co-pilot.

LTA Pilots (1380 designation)—100 hours in LTA aircraft, of which 30 hours will be as first pilot or co-pilot. All LTA pilots will obtain 15 hours night flying time as part of total time.

Instrument flying requirements of ACL-67-50 and revisions thereto are in effect. Administrative flying will be in accordance with OpNav 462.1.



ONCE TERMED non-repairable, a hole in the wing of a Corsair fighter measuring 44"x43" was repaired by Minnard Rudd and Clarence Russell, both AM1's, with the Boxer's all-Reserve air group off Korea. The plane was in flying condition 1.2 hours later.



WHEN THE seaplane tender USS Greenwich Bay called at Ras Tanura, Saudi Arabia, the crew decided it would be host to children from the American school there. So an invitation brought hordes of youngsters, sons and daughters of employees of the Arabian American Oil Company to explore the ship, eat ice cream and see movies. Note crew's pirate costumes.

JETS DITCH IN MEDITERRANEAN



VF-11's SOISSON, LEWIS SHAKE HANDS WITH McCONNELL, DEEHAN IN TOUCHING READY ROOM SCENE

THE first planned ditching of F2H-2 jets was reported by two Mediterranean-based jet squadrons, with the two pilots being rescued after 29 hours in their life rafts.

Two *Banshees* from VF-12, aboard the *Coral Sea*, were flying off the island of Crete in thick haze. The pilots, Lt. (jg) J. H. McConnell and Ens. O. E. Deehan, had been out instrument flying and dogfighting with gun cameras, between 20,000 and 35,000 feet.

Heading back for their carrier, they were unable to locate it via YE or "birddog". McConnell, with 1500 hours of over-water flying experience, knew something was wrong. They could talk to other pilots of their squadron, but not the ship, nor could the *Coral Sea* pick them up by radar.

With only 1600 pounds of gasoline left, he decided to follow the "birddog" heading, but transmissions became weaker and weaker. At 1300 his last transmission was heard: "I have 750 pounds of fuel, my wingman has 900 pounds. We're getting a very strong south-east indication on our birddog. No ship in sight yet. I'm afraid we've had it."

Within minutes the Mediterranean Air Sea Rescue Service sprang into action. Search planes left the *Coral Sea*. The USS *Oriskany*, anchored in Suda Bay, was ordered to get under way and add her planes to the day and night search.

Royal Air Force planes from Malta and Suez joined the search. The Royal Hellenic Air Force offered its services. The United States Air Force sent planes from around the Mediterranean and as far away as Germany to join the search.

Because Deehan had more fuel, he watched McConnell ditch his jet fighter first. He ditched perpendicular to the seven-foot swells running at the time.

When a few feet above the water, he chopped the throttle and let the plane slow down to 90 kts. When the swell he wanted to land in went beneath him, he topped the stick forward slightly and hit it squarely—belly first. There is such a high angle of attack at 90 knots that there is little danger of hitting the water nose first.

Ens. Deehan ditched the same way, 300 yards away. Fifteen minutes later the two life rafts were lashed together. Both pilots felt the shock of ditching was similar to an arrested landing aboard ship. Prior to ditching, both pilots unplugged oxygen masks, mike and phone cords. McConnell unsnapped his parachute, while Deehan kept his buckled. They kept one chute, since shroud lines were handy and the pilot chute made an excellent sea anchor. The one provided in the rafts was poor.

THE PILOTS observed that both planes with tip tanks gone floated with cockpit above water for about 15 minutes and wallowed after that for another half hour before sinking. They broke out their radar reflectors and after spending five hard and diligent man-hours were finally able to get them erected. One was thrown away because of a lack of a socket to hold it in one of the rafts. While getting the reflectors up, one of the water-making stills was lost over the side. The one that was left, however, would easily have provided enough water for both occupants. The canned water was sampled and found excellent, but the water purification tablets either were not used properly or would not prepare drinkable water.

Although neither pilot had eaten before the ill-fated flight, neither was hungry until picked up. A small compact fishing kit might be a good addi-

tion to the survival equipment, they reported.

A bright sun which provided power to make fresh water for them also sunburned them, and because they lacked a sunburn ointment, this might have been serious had they not been picked up so soon.

The downed aviators were constantly on the lookout for planes and when the first jet came into sight, they attracted its attention with a signal mirror, at the same time adding dye marker to the water and letting off a smoke flare that was seen by several other planes within a few seconds.

Within a few minutes the air over the rafts was crowded with diving airplanes, each of which dropped a smoke light, some two, until the area around the rafts was so smoky they could hardly be seen. Other planes were diving now, dropping rafts and other equipment.

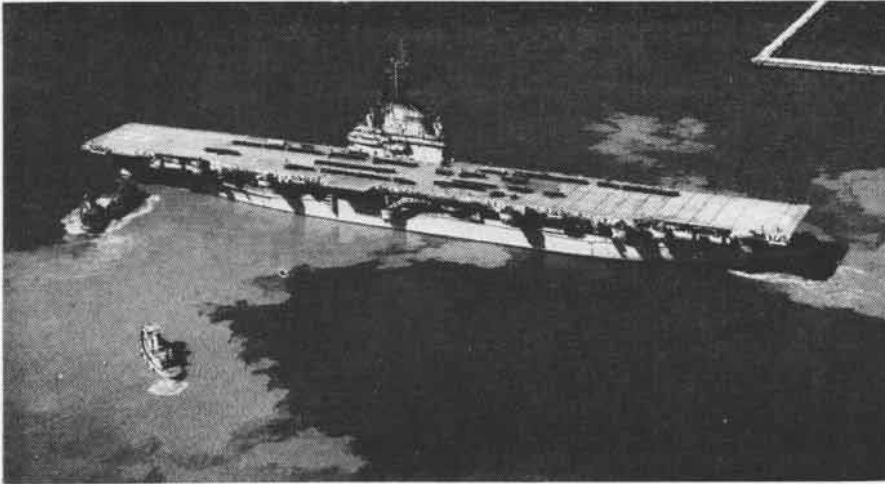
Although the two men in the water never doubted the good intentions of the diving pilots, it was the first time they ever had been dive bombed and they were just a little nervous. It is hard to dodge sitting in a bobbing life raft.

THE CROWNING blow of the episode was that the two VF-12 pilots were first sighted by two pilots from VF-11, the *Flying Ubangis*, traditional rivals of their own squadron, Lt. T. J. Soisson and Lt. (jg) G. R. Lewis.

"Next to not being picked up at all, being sighted by the *Red Rippers* was the worst thing that could possibly happen," they were heard to complain.

After their return to the carrier they were persuaded to have their picture taken in their rafts in the ready room, shaking hands with the two pilots who first spotted them. (See photo above). The actual pick-up was done by the USS *Stribling*, DD-867, 350 miles east of the point where they took off from the *Coral Sea* the previous day. Air Force searchers reported a life raft sighting 140 miles west of the carrier position.

It was determined after the search that the downed pilots could have been drawn off their course by Lydda radio in Tel Aviv, Israel which on 415 kc. put out the signals *Love Yoke*, only one kc. from 414 JB, the homer for the *Coral Sea*. Many pilots who were searching for the men reported they got the same strong needle indication while still getting a JB over their headphones. From this data, Cdr. B. T. Macomber of VF-12 set up a position where the downed pilots should be. They were found 75 miles from this spot.



TRIM SUPERSTRUCTURE, LACK OF DECK TURRETS FEATURES 'NEW LOOK' OF FAMOUS OLD ESSEX

ESSEX JOINS KOREAN WAR

USS ESSEX, KOREA—A familiar sight greeted all eyes in Task Force 77 in late August when the famous old battle carrier USS *Essex* (CV-9), now remodeled and reactivated, steamed into the Korean combat zone to relieve the *Princeton*.

Sixty-eight times in World War II, the 27,000 ton carrier poked her prow into the thickest of battle to earn herself the title "Fightingest Carrier in the Navy". From the initial Marcus island campaign to Okinawa, she set records.

From her first days in the Ko-War, it was apparent that she was up to her old habit of setting records again. She is the first carrier to operate two squadrons of jet aircraft, each of a different model (F9F and F2H), and the first to launch twin-jet *Banshee* fighters against the enemy. They were flown by the *Blue Bolt* squadron VF-172, of NAS JACKSONVILLE.

The *Essex* is the flagship of RAdm. John Perry, ComCarDivOne, and commanded by Capt. Austin W. Wheelock. Air Group Five operates from the *Essex* and is commanded by Cdr. M. U. Beebe.

Steaming in the wake of typhoon *Marge* and finding near-zero visibility over the target area on her first day of combat, *Essex* more than made up for this setback on succeeding days. With planes of the *Bon Homme Richard*, her aircraft ranged far and wide over North Korean transportation targets, scattering the enemy with bombs, rockets, strafing fire and fiery napalm. Her activities helped the Navy pile up its consistent record of flying 45% of all combat sorties in the Korean war.

VF-172 pilots found the heavier, larger *Banshee* a top-notch weapon and ideally suited for the Ko-War. Commented one airman upon returning to his ship, "She handles beautifully—most

wonderful plane I've ever flown."

Despite their heavy combat schedule, *Essex* and *Bon Homme Richard* found time for humor too. *Essex* was chided gently by her sister carrier in poetic dispatch, with reference to certain "luxuries" such as air conditioning and a personnel escalator to the flight deck which had been installed as part of the *Essex*' \$40,000,000 modernization program. The dispatch read, in part:

"We're sure that your conditioned air
Will prove a boon and serve you fair,
The *Bonny Dick* has naught so fancy
Not even one *McDonnell Banshee*.
We scramble still from deck to deck
By power of sturdy legs, by heck!
You see, we haven't reached the state
Where we're required to escalate."

When the third day of air strikes had been concluded, *Essex* was consid-

ered in the veteran class. On 26 August her aircraft spotted so many Communist targets along the transportation arteries feeding troops and supplies they had to call for assistance, and marked several for future attacks.

Night hecklers kept the enemy jumping while attempting to repair severed bridges and other transportation facilities after dusk.

During the last two years of *Essex*' inactivation, she underwent a modernization program to enable her to handle faster and heavier aircraft. Her flight deck was strengthened and antiaircraft turrets fore and aft of the island removed. Her island was streamlined in the pattern set by the USS *Oriskany* and the famous old CV-9 silhouette was a thing of the past with the Number One Lady in the class.

McDonnell Wins Contract New Cargo Helicopter to Be Built

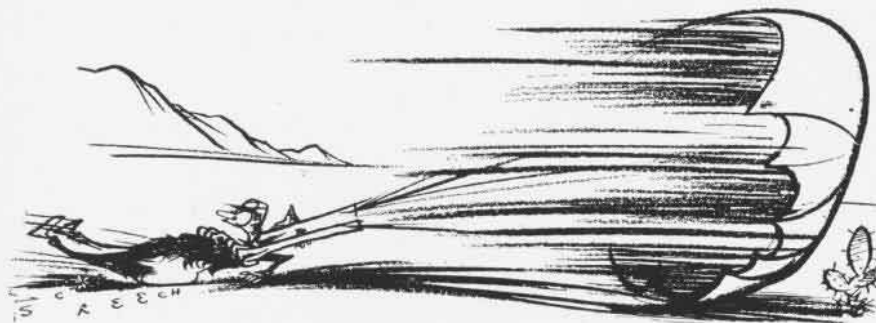
McDonnell Aircraft of St. Louis, Missouri, recently was awarded a contract by the Navy to build a jet-powered "cargo unloader" type helicopter. Six companies participated in the design competition. McDonnell's winning design uses a single, three-bladed rotor driven by small jet engines on the blade tips.

The new ship-based helicopter will be capable of transferring heavy equipment in short range operations under all weather conditions. It will have powerful winch equipment and retractable cargo sling and is designed to airlift cargo pods.



A HAWAIIAN welcome was extended to the *Princeton* when it arrived at NAS Pearl Harbor after nine months operations in Korean waters. Aboard were 111 officers and 2,027 enlisted men including Air Group 19. The ship was commanded by Capt. Paul D. Stroop.

'QUICK, HENRY, THE KNIFE!'



YOU MAY fly a long time and never need a knife, but if you ever do the chances are that you'll *really* need it. The two cases below are from *Grampaw Pettibone's* voluminous file of accidents and near-accidents.

Dragged Through Death Valley

After a loss of power in an AD-1 on a cross country flight, the pilot began making preparations for an emergency landing. He was over rough country but fortunately had 20,000 feet of altitude which gave him plenty of time to discuss the emergency with his wingman, and to take all possible action to regain power.

His efforts were to no avail so as he passed 11,000 feet he decided to drop the belly tank in preparation for a wheels-up landing in the desert. He discovered that squadron maintenance personnel had safety wired the jettison handle a bit too strongly, so he broke out his sheath knife and cut the safety wire. He didn't take time to replace the knife in the sheath, a mistake which he says "came out of my hide later on".

On closer observation the terrain below appeared unsatisfactory for a belly landing. In addition the plane began to vibrate so badly that it was difficult to hold on to the stick.

He called his wingman and asked him to coordinate the search and rescue efforts, put the plane in a shallow left turn, and bailed out head first over the port side. The chute opened promptly and the pilot watched the AD-1 make a wide descending circle to the left and crash in a shallow dive.

On the way down, the pilot observed that there was a strong southerly wind, that the chute was oscillating somewhat and that he was facing away from the direction of his rapid drift. He was unable to get turned around despite "sincere opposite-riser-twist" efforts.

Landing with rib-shaking thump and roll, the pilot reached to collapse the chute, only to find himself so tangled that he couldn't tell whether he was tugging upper or lower risers. Willy-nilly he was embarked upon a wild "Nantucket sleigh-ride" across the valley surface in a steady wind, estimated at upwards of 20 knots. The thrills of this ride were further augmented by bounces and thumps over sage clumps and three foot-dry creeks. Needless to say, considerable wear occurred when his skin contacted the ground. Reaching for his knife to cut loose, he remembered that it was in the plane. Attempting to unbuckle the

harness on the run, he discovered that the Mae West toggles had been pulled in the drag and he was very securely harnessed.

After what seemed like a drag of five or six miles the lower edge of the chute snagged a stump and the canopy quickly collapsed itself. In so doing, the snap tore a long rip in the edge of the chute, indicative of the force of the wind.

Thoroughly pummelled and fatigued, spitting dust and strong language, he hastened to unharness. While awaiting rescue, he examined the crash several hundred yards away and returned along the furrow he had plowed (actual

measurement 275 yards) recovering the PK-2 paraaft enroute. The inflated raft and poncho were used for comfort and shelter from the wind and dust until rescuers were able to reach him by a nearby road about two hours later.

Life Raft Troubles

This one happened during an F6F dogfight:

"I had the altitude advantage and was executing a pretty rough split-S onto my opponents tail. As the g's squashed me down in the seat I heard a "ping-ssss" and was forthwith unceremoniously shoved upward into a strait-jacket that had been my friendly shoulder straps. The CO2 bottle in my seat-pack liferaft had chosen that ill-conceived moment to fulfill its destiny.

"By the time I had figured out what was happening the liferaft had a sizable lead on me in the argument as to who was going to occupy the cockpit. As a clincher, a big bubble edged out from between my legs and started easing the stick forward. Visions of unexplained crashes in which planes dived straight into the ground flashed before my eyes.

"Frantically I searched for a weapon to battle that bag of wind. Jammed into the top of the cockpit I couldn't reach a thing. After an eternity I found a dull pencil stub in my flight suit pocket and with a fury born of desperation stabbed the beast to death.

"Now I hold no grudge against the liferaft—an RUDM was submitted and I'm sure the defective CO2 valve design has been corrected. What I want to sell is a knife sheath on every flight suit. The parachute riggers will rig one to fit any gleaming choice from penknife to machete.

"Mine was an isolated case, but it doesn't require much imagination to conjure a hundred other situations where a sharp blade might mean the difference between life and death.

"I wouldn't be caught dead in an airplane without a knife."



Grampaw Pettibone Says:

When the chips are down and you really need an item of safety equipment, no price seems too high.

My special agents tell me that a lot of mighty fine knives which were purchased during the last war are available in the Aviation Supply System—stock number R41-K-640.

Getting one is like getting money out of a bank when you don't have an account, because they are not on the allowance list as a personal issue item for aviators at the present time. However, I hear that this is to be changed in the near future.

LIGHTNING HITS 4 TIMES

NAS KEY WEST—Lightning may never strike twice in the same place, but four times within the last year it has struck planes piloted by Lt. Walter W. Alldredge II, of Fleet All Weather Training Unit.

One would think that after once, or at most twice, Alldredge would avoid lightning and cumulus clouds, but his job as jet pilot instrument instructor requires that he and his students fly through all weather, fair or foul.

Asked if being struck by lightning produced any strange feelings, he replied: "There is absolutely no sensation whatever other than a momentary condition of blindness. The planes are so thoroughly grounded that no harm comes to the pilot.

"You don't see the stuff. All of a sudden there's a flash and then it's over. Once though it sounded as if someone had struck the plane with a small hammer, but no damage was done."

From the ground, lightning assumes a long boltlike shape standing on the surface of the earth. But in the air, it's a momentary burst of brilliant color that fades fast. "Sometimes," Alldredge said, "The bolts will appear to be blue and other times yellow. Just why this is no one knows, and your guess is as good as mine."

Twice his plane has been struck on the nose and twice on the tail surfaces. The strikes average about once each three months. The only damage was incurred on the third time, lightning



ALLDREDGE IN COCKPIT OF T-2 TRAINER JET

striking the tail and moving out to the wingtip tank, burning a small hole into the metal and fusing it.

When asked if lightning strikes were like combat strikes, he said there was no comparison. "I'd much rather be struck by lightning than shot at—it's easier on the nerves." Alldredge was on the *Hornet* at Truk, Mariannas and the Philippines actions.

VF-41 Pilots Lead Gunners

14 Fliers Win E's During Past Season

COMFAIRJAX—Scoring 13 Navy E's, pilots of VF-41 wound up competitive gunnery, bombing and rocket exercises with Lt. (jg) Lucian P. Caulkett winning an active E in all three phases.

Caulkett previously had won a rocket E last May and since that award is good until next May, he might claim four E's. Even with three, however, he joins the select circle of triple-E winners, which has been achieved by only one

other Jacksonville pilot, Lt. (jg) Sherman E. Brent, formerly of VF-12.

When first target area results came in, it was thought Caulkett had missed his rocket E, but recheck revealed his score was mixed up with another pilot's and he actually had made the grade.

Gunnery E's went to Lt. George E. Rutledge and Lt. (jg) Wilton T. Sander, Jr., while Lt. (jg) John M. Sullivan and Ens. Warren J. Ackerman



TRIPLE THREAT MAN CAULKETT WHO WON 3 E'S

won them in rockets. Bombing E's were won by LCdr. Samuel B. Hibbard, VF-41's exec, Lt. Carl B. Tanner, Jr., and Ens. Richard E. Dick. Pilots who won E's last May were Ens. Vincent D. Kaptur and Richard H. Ellis and Lt. Benjamin F. Emge.

'Sherman Field' is Named

Pensacola-Area Unit Honors Late CNO

For the first time since the Pacific war, the Navy has waived its standing policy against naming airfields and has designated the new master jet field at Ft. Barrancas, Fla., after the late Adm. Forrest P. Sherman.

The new Pensacola-area field was named for him with the approval of Secretary of Navy Dan A. Kimball and Adm. W. M. Fechteler, the new Chief of Naval Operations.

During the war and previously, many Navy airfields and landing strips were named after aviation heroes. Since then numerous requests have been received from squadrons and interested activities suggesting that certain airfields be named after deceased naval aviators.

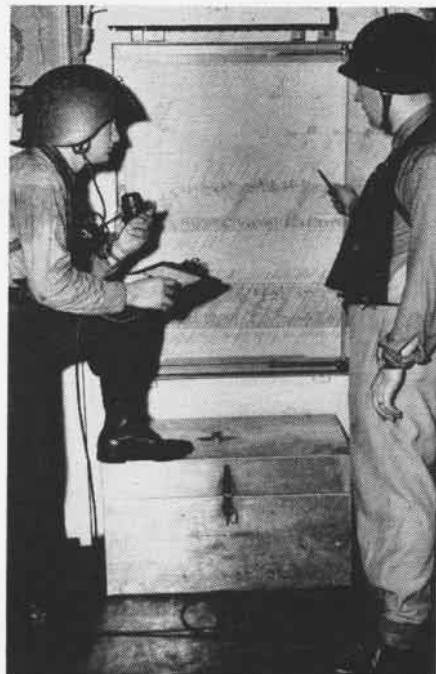
A policy was laid down at the close of the war to prevent injustices to so many deceased naval aviation heroes who could not be so honored that no fields be named. Only in the case of Adm. Sherman, who was a pilot, has this policy been set aside in 7 years.



AT ANNUAL WAVE reunion, Capt. Joy B. Hancock lines up with some of the 750 Waves and ex-Waves who gathered in Philadelphia recently to celebrate the Waves' ninth birthday



RICHARD R. AIELLO, AO3, ARMS A TINY TIM ROCKET ON CORSAIR DURING MIDWAY'S REFRESHER



CARP. G. B. STOKER PLOTS DAMAGE TO MIDWAY

MIDWAY SCORES IN REFRESHER TRAINING

AIRCRAFT carriers coming out of overhaul gain many new crew members, so to assure the fleet they are ready as a fighting team they undergo refresher training.

About half the carriers each year get this "check out", which involves doing almost everything which might be required in actual battle. The CVB *Midway* recently completed her refresher training at Guantanamo Bay, Cuba. Officers and enlisted "referees" from the Fleet Training Group came aboard and put the *Midway* through her paces.

So well did the carrier's men respond they carried off an overall mark of 81.5, highest attained by a CVB and one of three highest given to any carrier in more than two years.

The training included night air exercises and a complex battle problem involving torpedo, bomb, rocket, kamikaze plane hits and an underwater atomic bomb explosion—all simulated, of course. The short, concentrated check-out is like a scrimmage, showing how well a ship is organized.



FIREFIGHTERS ON HANGAR DECK OF MIDWAY CHECK THEIR EQUIPMENT



SIMULATED WOUNDED MEN AT THE MIDWAY'S BATTLE DRESSING STATION



TRAINING GROUP REFEREE LOOKS ON AS DAMAGE CONTROL CREW WORKS

S K J Y E T S

JETS have come to stay in the world's navies. Six of the pictures on these pages are late version British or American Navy fighters. The Supermarine **Swift** (left) flying with its WW II predecessor the **Spitfire** is similar to the Supermarine 510 which made the first sweptwing landing on a carrier in November 1950. The F7U made its carrier qualifications in July this year. Two of the Navy jets—the **Panther** and **Banshee** are in action hitting the enemy in Korea.

● SUPERMARINE SWIFT

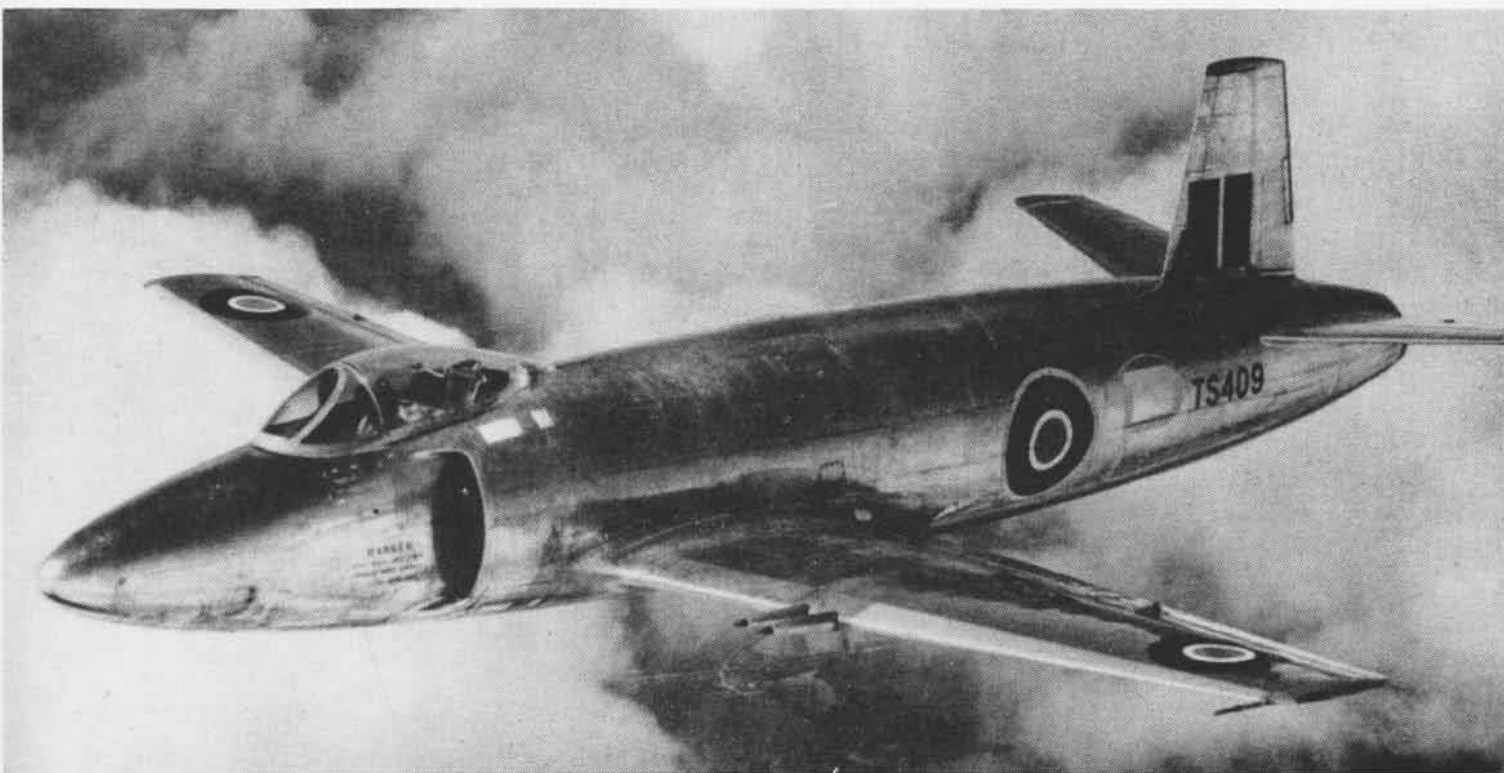
● F7U CUTLASS

● F2H-2 BANSHEE





● F9F-5 PANTHER



● SUPERMARINE ATTACKER

● DE HAVILLAND SEA VENOM



● F3D-1 SKYKNIGHT



AUSTRALIA GETS SEA VENOM



BRITISH BOULTON PAUL JET TRAINER WITH SIDE-BY-SIDE SEATS, POWERED BY ROLLS ROYCE JET

The Australian Navy has ordered a number of *Sea Venom* jet fighters from de Havilland to re-equip fighter squadrons now using *Sea Fury* prop fighters, claimed by the British to be the fastest piston-engined aircraft built. The *Sea Venom* is a carrier version developed from the well-known twin-boom *Vampire* jet.

Penbroke

The R.A.F. has placed orders for the Percival *Prince*, now in service with the Royal Navy and private firms. With the R.A.F., the *Prince* will be known as the *Penbroke*. This high-wing twin-engine light transport is useful for many chores, including communications, freighting, service training, etc.

SAAB J-29

A few of Sweden's sweptwing J-29's have been placed in squadron service. The J-29 is a high mid-wing jet fighter credited with a top speed of more than 570 knots. It is the first sweptback wing and tail fighter to be introduced into an operational unit in Europe.

Attackers for R.N.

No. 800 Squadron of the British Royal Navy is being equipped with Supermarine *Attacker* jet fighters. This marks the first R.N. operational squadron to be equipped fully with jet aircraft. These straight wing jets are earmarked to embark on the H.M.S. *Eagle* which is scheduled for commissioning later this year.

F3H Demon

The name *Demon* has been approved for the Navy's F3H jet fighter. Production of this single-seat aircraft is by McDonnell. The F3H, featuring all-swept surfaces, has been undergoing test flights.

Meteors in Korea

Elements of the Royal Australian Air Force flying in Korea have been equipped with *Meteor* Mk. 8 twin-jet fighters. The Mk. 8 model is also a standard operation jet in Western European air forces. (See recognition spread, August issue.)

F-84's Abroad

The air forces of Denmark and Norway have received their first batch of F-84 *Thunderjets* allocated under the Mutual Defense Program of NATO. France has already received a quantity of F-84's, and has them flying in operational squadrons.

Wyvern T.F. Mk. 4

The new version of the British *Wyvern* is the T.F. Mk. 4. This single-seat torpedo fighter is powered by an Armstrong-Siddeley Python turboprop engine of more than 4,000 h.p. The T.F. Mk. 4 is slated to be produced for the

RECOGNITION

Royal Navy.

Boulton Paul P.119 Jet Trainer

Boulton Paul's latest venture, the P.119, features slightly sweptback wings and sharply sweptback tail surfaces with high-set stabilizer. The P.119 was designed as a two-seat side-by-side jet trainer. Power for the aircraft is provided by a single Rolls-Royce *Derwent* turbojet engine with cheek intakes and tail exhaust.

F-94 Starfire

The name *Starfire* has been approved for the F-94, manufactured by Lockheed Aircraft Corporation. This jet aircraft is an elongated two-place version of the F-80 *Shooting Star*. Modifications include a longer nose to carry the necessary radar required for an interceptor and the addition of an afterburner for greater thrust power.

British Insurance

A new British four-jet bomber took to the air early in August. Named the *Insurance*, it features a novel engine arrangement with the four turbojets fixed in pairs of two, stacked one on the other, outboard of a slab-sided fuselage. Its straight wing is sandwiched between the engine nacelles.

Supermarine 508

Designed as a naval fighter, the 508 is powered by two *Avon* jet engines with cheek intakes and wing root exhausts. It is described as the world's fastest and most powerful naval jet fighter. Of interest is the V, Beech *Bonanza*-type, tail assembly.



TWO SWEDISH SAAB J-29 JET FIGHTERS, NOW IN SQUADRON USE: FIRST EUROPEAN SWEEP FIGHTER

HELICOPTER MAKES NO-WHEELS LANDING



THREE LIFE RAFTS, MATTRESSES, MULES CUSHION 'NO-WHEELS' LANDING



PIASECKI HELICOPTER WITH BROKEN LANDING GEAR LANDS IN ITS 'BED'

HMX-1, QUANTICO—Safely landing a HRP-2 helicopter with broken main landing gear was a problem neatly solved by this squadron, using life rafts, "mules" and bed mattresses.

During a severe landing, all braces of the main landing gear were sheared off. The gear remained attached to the fuselage by the oleo's, but the wheels had no bracing and were free to move in any direction.

The instructor lifted the damaged plane back into the air and returned to base to determine damage. While he hovered over the engineering line for half an hour, attempts were made to strengthen the gear enough to permit a landing.

The first efforts were to brace the main landing gear by use of nylon cord fastened to the nose wheel braces. This kept the main gear from moving backward but did not prevent its moving forward. Meanwhile, a seven-man life raft was inflated, covered with pads, staked to the ground to act as a support and prevent the fuselage from touching the ground.

During the period of waiting, the executive officer of the squadron climbed aboard the helicopter and relieved the student co-pilot who then bailed out from the great height of three feet. In addition, direct communications from the plane to the ground was needed so a field telephone was tossed to the pilots who received their instructions from the commanding officer.

Following his signals and directions, the pilots twice tried to land the helicopter. However, severe ground resonance was encountered both times. Fearing the helicopter would roll or shake apart, the pilots elected to rise into a hover again.

It became apparent that firm supports on either side of the helicopter fuselage were necessary to prevent its rolling,

so two warehouse tractors, commonly known as "mules", were used. They were padded with four-man life rafts and mattresses. Pilots lowered the fuselage into the space between the two padded mules.

On this landing, the helicopter again hit severe ground resonance. However, the pilots cut the engine as soon as the plane touched down and by leaving the friction switch on, the resonance soon dampened out. Thus a successful landing without use of landing gear was made without further damage to the fuselage.

Pretty Miss Packs Pistol Lady Marine Scores High on Range

MCAS CHERRY POINT—Official duty as a courier for Secret and Confidential files required that pretty Pfc. Beverly Meredith know how to use a .45 caliber pistol. Measuring up to the traditional ability of Marine sharpshooters, the lady Leatherneck recently qualified as a marksman on the Cherry Point range. She went through the rigorous course and fired the highest score yet attained by any of her sex at this station.

Pfc. Meredith had never fired a pistol and she was strictly on her own on the range. She has earned the respect of the Marines with her fine score. She packs that shootin' iron with authority when official duty calls.



PFC. MEREDITH SETS WOMEN'S RECORD OF 241

Navy Aids Polio Sufferer Flies Texas Student to Minneapolis

NAS CORPUS CHRISTI—After meeting technical problems which threatened to balk the flight, a Navy plane here flew a 17-year-old polio victim, Donald Rossi from here to Minneapolis on 28 June in a rush humanitarian flight.

An R5D from the Acceptance, Transfer and Training Unit of Fleet Logistic Air Wing was used because the station's R4D would have to refuel en route. Rossi was stricken a month before and paralyzed from the neck down. He had been in an iron lung ever since and had to be taken to Sister Kenny Institute for treatment.

The maintenance gang solved the problem of electrical power for the iron lung by installing two 3000-watt gasoline-powered generators, one forward and one aft in the main cargo compartment. Windows were removed and metal-backed asbestos plates were installed for the exhaust lines for the generators. A test prior to the flight showed no carbon monoxide traces in the cabin.

In case of failure of both of these units, eight volunteer men were taken along to operate an emergency hand pump that would keep the 500-pound lung going. The plane was piloted by Cdr. G. H. Duffy, CO of ATTU, and LCdr. H. F. Newman, acceptance and transfer officer.

An air evacuation radio call was used, which enabled the flight to get priority on altitudes and evade undesirable weather and turbulence. The flight had a cheerful side for Rossi. He had been taking a course at ATTU with a group of Air Scouts from Corpus Christi College Academy but was prevented from taking his graduation flight in an R5D by the polio attack. His arrival at Minneapolis on the R5R was televised.



THE NAVY'S Fleet Logistic Air Wing is flying planes again as far south as San Juan, Puerto Rico. LCDr. Mary C. Grimes, flight nurse, descends from the first flight on 21 July. End of the line formerly was at NAS Guantanamo, Cuba. Capt. J. R. Lunger, 10ND aviation officer, is behind the nurse.

Tender Men Save 40 Chinese Chickens, Ducks, Flour Also Rescued

USS PINE ISLAND—When the ship's baseball team was returning to the tender in a motor launch from a game ashore, a Chinese boat crowded with men yawed and keeled over, throwing 70 persons into the water.

The *Pine Island* boat proceeded to the scene and rescued about 40 survivors, including several ducks, a chicken and a 100-pound bag of flour that could not be separated from its owner even though he was almost drowned. Incidentally, the chicken perched on the head of his owner while the latter swam for his life.



THOUSANDTH landings aboard carriers usually call for some special celebration, but it took the USS Monterey to do it up brown. When the 20,000th landing was approaching as the training carrier was cruising off Pensacola, a big sign was painted and stuck on an SNJ. When the 19,998th landing was made, the "J" was brought up from the hangar deck, Cdr. C. P. Smith, operations officer, and Capt. D. L. Mills, CO of the carrier, climbed aboard and took off. A few minutes later they came in for the 20,000th. The landing was made on lucky Friday 13th.



NORFOLK'S AMERICAN BALD EAGLE 'AT HOME'

Eagles Copy Norfolk Fliers Prove to Be Cagey Camera Subjects

When the sleek Navy jet fighters take off at NAS NORFOLK, two American bald eagles often take to the air with them.

Although the American eagle usually dwells in the Rocky Mountain regions of the West, these two birds constructed their four-foot nest near the station a few seasons ago. Since that time, they have come and gone only for short periods of time. Usually one will sit on the nest while the other wings overhead in "lazy-eight" figures.

Last year an order went out directing that all dead trees in the area be destroyed.

When Navy officials at the air station received word that this area included the hangout of "two large brown birds with white heads, neck and tail," they immediately issued a counter-order stating that the trees supporting the birds of the "national emblem of the United States" would remain intact.

Saving the nests was easy but getting pictures of the eagles was something else again for NAS photographers, although they had previously experienced little difficulty in stopping a 600-mph jet-propelled "bird" in flight.

The first system called for an alert by a civilian gardener "bird sighter." But by the time he had phoned the District Public Information Office and the DPIO had phoned the photo lab, the birds had flown.

A second system then was put into effect. Lt. George B. Dutch and his able camera crew maintained an "eagle watch" and finally managed to get pictures with telephoto lens and elaborate equipment. They were forced to "shoot" from a distance as protection against the birds' dangerous claws and to avoid frightening them away. ("Elaborate equipment" meant clubs for protection.)



LCDR. J. D. Bille and F. H. Richardson, ADC, of FAWTUPac, NAS Barbers Point, pose in front of their AD-1Q powered by a Wright R-3350-24WA engine which completed its 1000th hour of flying time without overhaul on 17 August. So far as the squadron could determine, it is the first engine of this make and type to have logged 1000 hours without overhaul being done.

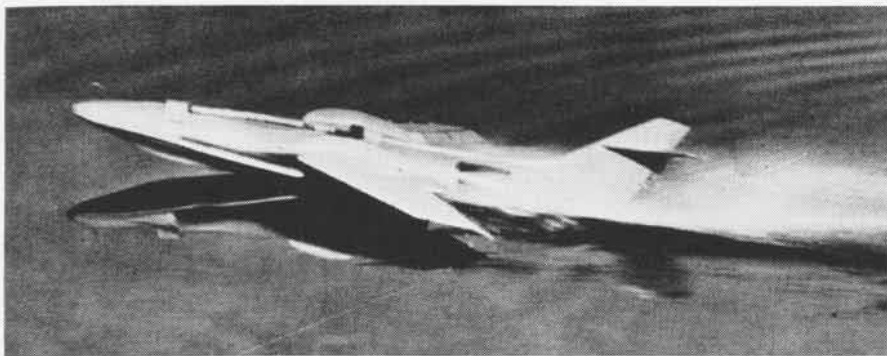
Actor Contributes Services Robert Montgomery Narrates for Navy

NAS ANACOSTIA—The narrator's voice in the new Navy training film, *Duties of A Shore Patrol* (MN-7318) will sound familiar to most of the audiences. LCDr. Robert Montgomery, well-known actor and producer, contributed his services for the shore patrol film.

The picture tells the story of the problems encountered by servicemen drawing shore patrol duty when in port. It was photographed in semi-documentary style in the Washington, D. C. area.



FLEET AIR Jacksonville's ace gunners are shown above. More than 50% of VA-175's pilots qualified for the Navy "E" in recent glide bombing exercises. Leading the nine-man crew was Cdr. Malcolm E. Wolfe, the skipper, with Ens. Joe Sherin and Ens. Charles Gibson second and third. In the above photo the sharpshooters are: standing, Ens. Floyd Bryan, Albert Giles, Floyd Cabill and Lt. Edwin Scorza. Kneeling, Ens. Harry Sager, Cdr. Wolfe and LCDr. Harry McRae. Missing were Sherin and Chas Gibson.

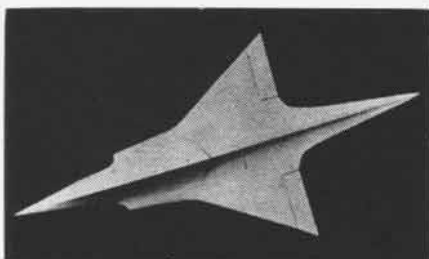


MODEL OF SKATE, POWERED BY PULSEJET ENGINES, PROVES THEORY OF SUPERSONIC SEAPLANE

Skate Supersonic Seaplane

THE NAVY has released details of an research project with Consolidated-Vultee investigating aerodynamic and hydrodynamic possibilities of a jet-propelled, supersonic, seaplane fighter called the *Skate*.

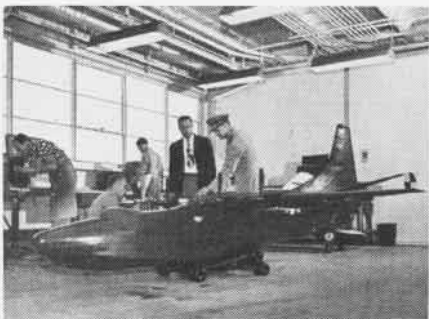
A three-foot wingspan flying model of the design was constructed, powered by two small pulse-jet engines to study how the fighter would operate. The Navy



CUDDA MODEL SHOWS BLENDED WING AND HULL

has no seaplane fighters, although the British have a jet Saunders Roe seaplane fighter already flying in lower speed ranges.

The small photograph accompanying this article shows the small Convair powered model skipping over the water. Its planform is slightly different from that of the *Cudda* shown here, but in-



CONVAIR'S XP5Y-1 MODEL GIVEN SMITHSONIAN

volves a delta wing and blended wing-and-hull design.

The *Skate* project was instituted primarily to see if a high speed jet seaplane was feasible and if a design could be made which would keep water and spray out of its jet intakes. The *Skate*

utilized a "spray dam" to hold down this problem, which bothers all seaplane designers.

Convair has used dynamically-similar radio-controlled scale models on another Navy seaplane project, the XP5Y-1, the world's first turboprop seaplane now undergoing flight tests at San Diego. The latter model weighed 125 pounds and had four midget gasoline engines. It made more than 2,000 test runs and recently was turned over to the Smithsonian Institution's Air Museum by Convair.

The *Skate*, unlike the XP5Y-1, has no wing floats, but depends on a low center of gravity and high water-plane inertia to float upright without them. The model was able to avoid waterloops which plague conventional seaplanes with floats in rough water.

New Zealanders at Alameda Flying Boat Takes Long Way Home

NAS ALAMEDA—American hospitality was extended recently to an English-built Short *Solent* flying boat and its crew while they awaited favorable weather for an overseas hop to New Zealand. The five crew members took over the plane in Ireland and flew it in easy stages to the West Coast. They used naval air station facilities en route by arrangement with CNO.

The *City of Belfast*, as the big four-engine craft is named, will be used by Tasman Airways, Limited, on new routes scheduled between New Zealand and several southern Pacific islands, including Tahiti. It is in the luxury class, carrying seats for 38 passengers and 7 crew members. There is a complete galley for preparing meals in flight.

The crew took "the long way home" to New Zealand because the troubled situation in the Near East and Asia made fueling and other facilities uncertain on the shorter route. Before departing from NAS ALAMEDA, the New Zealanders played host at a party of officers of the air station and VR-2.

Carrier on Kansas Cruise

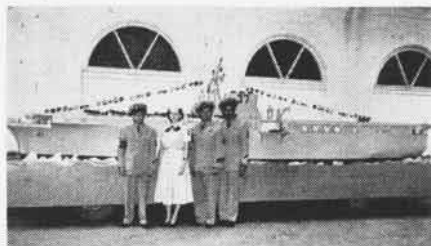
Model of Essex Visits Plains Affairs

A Navy man-of-war has been cruising the plains of Kansas under the direction of Battle, with the capable assistance of a Parson who is not a minister of the gospel.

Folks along the Kansas highways stopped to stare at a station wagon pulling a ship, even though the ship was only a model of the famous carrier *Essex* which was making the rounds of fairs to aid Navy recruiting.

"Honest" John Battle, chief gunner's mate, present skipper of the model *Essex*, declared, "This is one voyage I won't need to worry about submarine attack." Battle's assistant on this voyage was Hazel E. Parson, WAVE yeoman first class, who made her first land-going cruise as staff member of a Navy ship. She is the first enlisted WAVE on duty in the midwest area since World War II.

In the photo are Merlin K. Jones, ADC, Parsons, Battle, and Edward Spicer. Jones and Spicer are Dodge City recruiters.



CHIEF BATTLE AND CREW OF KANSAS' CARRIER

• NAS NEW ORLEANS—A "well done" goes to officers and men of FASRON 822 for setting a new drill attendance record in July. The FASRON averaged 96% attendance.

• FLOGWINGLANT/CONTL—Four enlisted women will be the first representatives from the Navy to attend a three weeks' course for flight orderlies at Kelly Air Force Base. One additional flight orderly will attend the school each three months thereafter to provide trained personnel for local training programs.



THIS IS THE new national skeet champion team of the Class C division of Service skeet shooters from NAS Dallas. Left to right, they are: D. E. McWhorter, AO2; Art Huffman, AF2; P. P. Hamilton, BM2; Lt. R. E. Collins, manager; J. D. Nelson, AOC, and Charlie Lewis, ALC. Nelson and Lewis won silver cups also, firing in the E division.

AIR RESERVES STRIKE ENEMY IN KOREA



ABOARD THE *BON HOMME Richard*—AI officer Waldner briefs exec Harman and Lt. Anderson for a close-air-support mission over Korea while other VF-783 pilots wait their briefs

AS THE FIGHTING goes on in Korea, Naval Air Reserves continue to turn in top combat performances. In a typical month, every third American plane that flew over Korea on a combat mission was piloted by an activated Navy or Marine Air Reservist.

Of 8,000 combat sorties flown by Navy planes, 74% were by activated Naval Reserves. This figure is understandable, when you consider that all of the aviators on the *Bon Homme Richard* and 90% of those on the *Boxer* (carriers now operating in Korean waters), as well as 50% of those on the *Princeton* (a veteran of the Korean fighting) are Reserves. Half of the patrol squadrons in the combat theatre are also activated Reserve VP's.

How a "weekend warrior" squadron achieves status as a full-time combat outfit is shown in this story of VF-783 formerly of NAS LOS ALAMITOS.

The story goes back to 20 July 1950—the day VF-783 was activated.

The not-so-young fighter pilots, nearly all veterans of the last war, in "783" had 12 hours to wind up civilian loose ends. Then they took off for NAS NORTH ISLAND. There they teamed up with three other squadrons to form Air Group 102, and started readying themselves under CAG Cdr. Funk.

At first, the Reserves were sure they had an odd war by the tail. But that only applied to the paper work. The

shooting was the same in every way.

Although most of the pilots had been raised on *Hellcats*, they now were assigned *Corsairs* and had to master its variations. Then came an extensive course in rockets and bombs at El Centro. Led by CO LCdr. J. O. Anthony and exec LCdr. W. R. Harman, they literally beat the "bull" out of the bullseye, setting many records.

Climax came in the second and third

quarters of 1950—during that period they led the Pacific Fleet in hours flown and also won the coveted safety prize. Backing the line all the way were Chief Machinist Lair and his maintenance crew and Lt. Byron's ordnance gang.

Carrier qualifications were next on the docket. VF-783 pilots accomplished theirs at Pensacola without a hitch.

RETURNING to San Diego, the "Minutemen" boarded their new home—the *Bon Homme Richard*.

Next stop was Pearl Harbor where time out was taken for night carrier qualifications. A group from each squadron was chosen for these quals. VF-783's contribution consisted of Lts. Redmond, Byron, Miller and Keane; Lt. (jg)'s Dixon and Weber and Ens. Nichols. There were no accidents.

Then they were off to Korea.

The ship by-passed Japan and reported directly to the forward area, where the "Minutemen" got their first glimpse of Korean air warfare.

Then the grind began.

From early dawn until the late hours of the night, they were loading, repairing, briefing, spotting, flying and debriefing with finesse that comes with years of experience.

In their first 30 days of actual combat, VF-783 delivered more than 290,000 pounds of rockets and bombs to the enemy, as well as umpteen hundreds of thousands of .50 cal ammunition.

On a typical flight, a division, led by Lt. E. A. White, accounted for two bridges destroyed, one damaged; one



"PILOTS, MAN YOUR PLANES" blares over the public address system and the Naval Reserve aviators of VF-791 walk out to their F4U's for another attack against the Reds



ADM. W. K. PHILLIPS, ACNO (Naval Reserve) and Capt. F. W. Priestman, Coordinator Naval Air Reserve, check combat reports

locomotive destroyed and one damaged; and six boxcars shot up by .50 cal ammunition, one left burning brightly.

Now, every day finds VF-783 pilots taking off at dawn to seek out and destroy bridges, gun emplacements, tanks, vehicles, troops and other vital installations, while the rest of the squadron keeps their planes ready for action. All of which shows that the years of peacetime training VF-783 put in are really paying off in results.

Big Stretch at NAS Nola

NAS NEW ORLEANS, one of the smaller of the Navy's aviation shore establishments, almost burst its seams this summer when more transient machines and men descended upon it than at any time before in its history.

The little station, originally designed and commissioned as a primary training base, has no runway length or acreage to spare. Yet, because of its "salutary" location near the southern seaboard swamps and the Gulf of Mexico, which afford live bombing and gunnery practice, it was selected by the Naval Air Reserve Training Command as one of the main gathering points for Organized

squadrons on annual training duty.

Altogether, 18 units from other Reserve bases trained there between 1 July and 22 September. This meant that some 225 visiting aircraft and 2,500 officer and enlisted Reservists worked out of NAS NEW ORLEANS this summer—the hottest in a ten-year period.

NAS ST. LOUIS led off on 1 July by sending VA-922 to the Crescent City. Anacostia followed the day St. Louis left with VF-665, VA-661 and FASRON 661. At the same time New Orleans had two of its own squadrons on active duty, VF-822 and VS-821. While all this was going on, VMF-124, from NARTU MEMPHIS swooped in for a week, primarily for air-to-air gunnery over the Gulf and bombing on the newly reconstructed Hancock County, Mississippi bombing range, 20 air minutes from New Orleans.

NAS AKRON followed with VA-651 and VA-656. Then came NAS DENVER's VF-718, VA-718 and FASRON-711. NAS LINCOLN followed with four squadrons: VF-761, VF-768, FASRON-761 and Air Wing Staff 76. NAS ST. LOUIS sent two more squadrons, VF-924 and VA-921; NAS DENVER followed with VF-711 and Memphis closed the training period with



'CHALK UP ANOTHER STRIKE' say VF-783 pilots Keane, White, Grabowski and Nickols after a successful morning's operation

VA-796 reporting for duty. During the training periods for these out-of-town squadrons, NAS NEW ORLEANS trained its own VS-822, VF-823, Air Wing Staff 82, and FASRON-822.

During the rush period, planes completely covered the taxiways and aprons and were parked on grass. R4D's by the flock, of which the small-sized host station has none among its complement, came in and took off in what at times looked like a Berlin-type airlift.

VP-861 Tops Totem Pole

VP-861 recently completed a four months' tour of advanced base duty in the Mediterranean, thus becoming the first Reserve patrol plane squadron to perform duty in that area since the close of World War II.

The squadron was recalled to active duty from the Organized Reserve program at NARTU NORFOLK in September 1950, and has been a unit of FAW-11 at NAS JACKSONVILLE since that time.

With no accidents of any kind in its first year of active duty, VP-861 has found itself atop the Totem Pole, which indicates the comparative safety standing of AirLant squadrons.



STRANGE SIGHT at NAS NEW ORLEANS are these R4D's lined up en masse, but they brought visiting squadrons on summer cruises



TIME OFF during their two-weeks training—NARTU ANACOSTIA Air Reservists tour the famous French Quarter at New Orleans

SURVIVAL KIT DEVELOPED



ALL THESE ARTICLES MAKE UP CAG-102'S SURVIVAL KIT, WHICH IS CARRIED IN CAN BELOW

CAG-102, PACIFIC—This air group aboard the newly-commissioned *Bon Homme Richard* has developed a survival kit to be dropped by parachute to pilots forced down in enemy territory or in places where helicopters cannot reach them.

The air group is composed of four Reserve squadrons: VF-781, VF-783, VF-874 and VA-923. It also has teams from VC-3, VC-11, VC-35, VC-61 and HU-1. Cdr. H. N. Funk, CAG, directed his survival officer, Lt. Clarence E. Cox, to develop a kit that could be carried on all strikes and dropped in emergencies.

The following items were put in the survival kit: a blood chit, which is the pilot's life insurance, a .30 cal carbine with 180 rounds of ammo, a radio transceiver with extra battery, two emergency food packets, 50 rounds of .38 cal ammunition for the pistol the pilot carries, two two-ounce bottles of brandy, chap stick, a carton of cigarets and matches. Also included is a cloth map of the area, wrist compass, hand-generating flashlight, first aid kit, flares, sun glasses, sheath knife, boy scout knife with screw driver and can opener.

Other articles in the kit are a large folding knife, coveralls, signalling mirror, wool and leather mittens, soap, toothpaste and brush, toilet tissue, water canteen and police whistle. All articles were assembled and packed in a sleeping bag, secured to a back pack and loaded in a bomb-shaped can with a chute for lowering. The whole kit is carried on a plane's bomb rack and the bomb selec-

tion switch covered with red tape so the pilot will not drop the kit inadvertently.

So pilots would know what was in the kit, a display board was built by Kenneth Wolfe, ADEI, and Albert J. Ziegler, AKA, and hung in the wardroom.

Seattle Bugler Gets Assist Skirl of Bagpipes Keeps Men Awake

The Seattle Air Station is probably the only base in the Navy where men wake up to the bugle notes of reveille—then are kept awake by the "soothing" music of Scottish bagpipes.

Reason for this irregular procedure is Gerald West, a chief aviation electronics technician in FASRON-895, who



CHIEF WEST STARTS THE DAY OFF WITH A TUNE

begins the day by playing a jig or two on his bagpipes.

Reservist West plays his pipes in the early morning "because it doesn't shake up too many people then," a good theory if you believe it.

Though he is a rugged Scot, Chief West has denied two of the old stories about pipers: "They do not carry a bottle of Scotch in the bag of their pipes" and "It doesn't take seven generations and seven years to learn to play the pipes."

In addition to his Navy job performing major overhaul work for squadrons operating from the Sand Point station, West is a member of the Washington Scottish Pipe Band, which took top honors in the Highland Games competition in August 1950.

Two More Corsairs in Mill AU-1 and F4U-7 Join Famed Aircraft

Two new versions have been announced of the ageless F4U *Corsair* fighter—an AU-1 for the Navy and the F4U-7 for the French government under the Mutual Defense Assistance Program. Both soon will be rolling off the Chance Vought production lines.

On the basis of Korean war experience, the Navy has ordered the *Corsair* converted from a night fighter-bomber to a low altitude attack-type plane suitable for close air support of ground troops. This will be the AU-1. It originally was known as the F4U-6, its P&W R-2800-83WA engine being single-staged for low altitude work, replacing the R-2800-32 in the F4U-5.

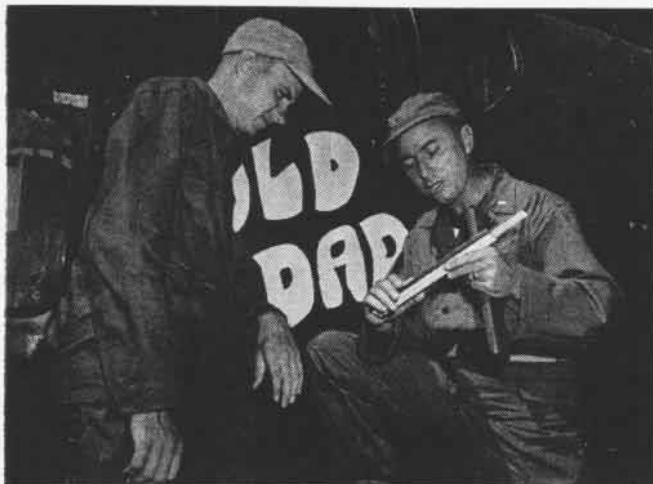
The AU-1 supersedes the F4U-5N on the production line. Externally, it looks the same as the F4U-7 except that the French *Corsair* will have a scoop in the bottom center of the nose cowl instead of cheek scoops.

The F4U-7 is similar to the F4U-4 but carries heavier armor and armament than the earlier version. It has the P&W R-2800-18W two-stage, two-speed engine.

By going through seven different versions, the *Corsair* is among the leaders in this respect. The *Hellcat* got only as high as XF6F-6. Earlier, the Navy had such high model numbers as XF8C-7, XF4F-8, XSBD-7 and PN-12, but no quantity production was ordered on any of them as with the *Corsair*.

The *Corsair* has undergone some 981 major engineering changes and a total of 21,000 production changes during a 10-year period. A total of 12,759 of the gull-wing craft has been built.

• NAS LAKEHURST—A parachute riggers' school will open shortly at this station. PR2's and above will learn stowage, maintenance and use of airborne survival equipment in the course covering eight weeks.



LT. (JG) George Hamilton solves loading problem on slipstick at Munsan UN advanced camp while Lt. (jg) Paul Myatt watches



CREWMEN OF Navy helicopter detachment go to "flight quarters" to get ready for coming flights by members of UN delegation

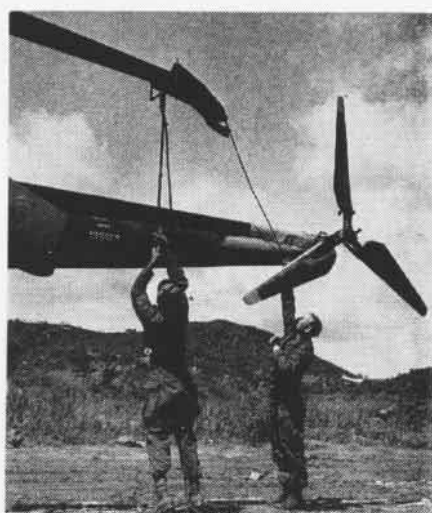
NAVY PINWHEELS AT KOREAN PEACE TALKS



DONNIE Cowser, AD3, and John N. Price, airman, tighten helicopter rotor blade bolts



BEHIND plexiglas, Lt. Myatt works controls of helicopter assigned to aid UN logistics



AFTER THE day's work, Saliba and Gerald T. Campbell put restraining boot on the rotor

FROM naval air station at Miramar, Cal., to LST-803 in Inchon, Korea, harbor to Munsan advanced camp is the travel record of a detachment from HU-1. When UN peace talks started at Kaesong, the detachment moved to Munsan

to provide logistic support for Navy representatives. When armistice discussions broke down, the helicopter ground-crewmembers were able to catch up on maintenance work. The detachment was an air-sea rescue unit when on the ship.



TEMPORARY halt in peace talks gave aircrewmembers Jack J. Saliba, Arvid L. Schmid and Lonnie Walter chance to refuel helicopter



PRACTICING rescue techniques during talk lull; this helicopter rescued F-80 pilot from Inchon harbor when it was based there

21,000 HOURS IN THE AIR



CHIEF BOATSWAIN BYRNE MIGHT SPROUT WINGS

NAS NORFOLK — The man with probably more flight time than any other pilot in the Navy is Chief Boatswain Patrick J. Byrne of V-31, who has logged more than 21,000 hours of flight time in 34 years of continuous service in the Navy.

His present job is to ferry "big boats" between Norfolk, Jacksonville, Pensacola, Corpus Christi, San Diego and Seattle.

Two years before he joined the Navy in 1917, Byrne started flying as copilot with Harold Borden, later a well-known Army general, on first commuter flights between Rumson, N. J., and New York City. They flew the first model Burgess Dunne seaplane, with a pusher Curtiss engine.

"We controlled the plane with two sticks in the cockpit," he recollected. "There was just aileron control—no rudder or elevator, like in later aircraft."

During that same period he flew with Aviation Pilot #3, better known as Admiral P. N. L. Bellinger. He won his gold Navy wings in 1920 in the first enlisted class in Navy history to go through Pensacola. He still holds his card designating him AP #10.

Byrne went up through the ranks to lieutenant commander in 1944, which rank he held until early last year when he reverted to his present rank under policies in effect at that time.

Most of his Navy career was in patrol planes. In World I he patrolled the Atlantic seaboard in H-12 and H-16 twin-engine seaplanes. In World War II he piloted PBM's and PBY's on patrol and survey flights as far as North Africa, England and South America.

Chief Byrne claims never to have had a crash in those 21,000 hours of flying time although he bent a prop once and

had similar small accidents. He never bothers with maps while on his ferrying trips. If there is an inexperienced copilot along, Byrne will brief him on the check points by memory, calling off the towns, inlets and lighthouses by their names and in the order they will appear.

When asked if he had any retirement plans, he said: "Retire? What for, mate? I'm not anxious to get out of the Navy. I'll stay in as long as I possibly can." VP-31 men figure that as long as there are any P-boats around to ferry, Byrne will be around to move them.



CRAFT BIDS 'IRV' GOODBYE BEFORE TAKEOFF

Navy Pilots Come and Go But Irv Still Waits at Barber's Point

If you are one of the many pilots who have passed through the variously named night or all-weather training organizations that has been stationed at NAS BARBER'S POINT since 1944, you probably know Irv.

His history goes back to sometime during World War II when he could be seen prowling the spaces of NACTUPAC at Barber's Point. In early 1946, two aviators of what was then Night Devron Pac captured Irv in a near wild state. The owners patiently tamed Irv until he became quite a domesticated and friendly dog.

About a year later when Irv's first masters were transferred, Ens. Richard Hicks attached to VCN-1 assumed the responsibility of caring for him. Dick and Irv got along very well, and Irv became quite attached to his new master. Then one day Dick was killed in a crash. Irv knew his master too well to think that Dick would leave him. For weeks he waited anxiously for Dick to return, not even giving up his watch for food. As time wore on Irv began

to eat and sleep but never with the enjoyment of most dogs.

Irv has had other masters. Ens. Warren, Lt. (jg) Trout, and Lt. (jg) Shelton, for example, fed him and gave him a place to sleep, but it seemed as if Irv thought they were only temporary guardians.

Irv's most recent master was Cdr. "Doc" Crafft attached to FallWeaTraPac. "He" took good care of Irv for two years and Irv seemed to appreciate it. Then "Doc" was transferred.

Now Irv is alone again. Once more he can be seen wandering around the hangar or in the offices of FallWeaTraPac. He still just waits.



Navy Doctor Sets Up Display Many Civilian Defense Groups Use It

In keeping with the Navy's long tradition of service in the public interest, Capt. Carroll P. Hungate, MC, USNR, medical officer at NAS OLATHE, developed a portable exhibit primarily designed to acquaint civilians with atomic warfare defense at the community level.

This exhibit was first presented to the public in April, 1950, and has since been shown to over 23,000 citizens of Kansas, Missouri and Nebraska. It has become a nucleus about which civilian groups are founding their plans for radiological defense.

The exhibit consists of "The Atomic Age," a portable display describing in



CAPT. HUNGATE WITH HIS 'ATOMIC AGE' EXHIBIT

cartoons and pictures the layman's approach to nuclear physics. Atomic defense films and radiological defense lectures are also scheduled along with the exhibit.

Officials at Oak Ridge, Tennessee, *Life Magazine*, the Atomic Energy Commission, as well as a score of corporations, institutions and military establishments cooperated in preparing the display.

VP-2 Shows Fine 'Can-Do' Spirit



ENGINE of P2V-4 is being removed at NAS Whidbey Island with a re-designed fork lift.

A MAJOR maintenance job was recently completed by Patrol Squadron Two in record time to meet its deployment deadline.

VP-2 was one of the first squadrons assigned a full complement of P2V-4 aircraft equipped with Wright Aero's new R-3350-30W compound engine.

In this engine, also known as the turbo-cyclone 18, the velocity energy of exhaust gases of a standard reciprocating engine is captured by gas turbines and transmitted through gears, shaft, fluid couplings, and more gears and shafts to the propeller shaft in the form of added horsepower.

In making this new advance in aircraft engine power and economy, all parties concerned expected that there would be certain "bugs" in design that would come to light and have to be ironed out after the engines were subjected to standard fleet air operations, and that is what happened.

There grew up at NAS WHIDBEY ISLAND, Wash., where the squadron was based, a working alliance comprised of Commander Fleet Air Seattle AMO, Wright Aero's Mr. A. G. Steinert, FASRON 112 and VP-2. AMO acted as planning coordinator, expeditor and dispatch writer. FASRON 112 modified and adapted existing plane and ground handling equipment to suit the job. VP-2 power plants division, under the direction of W. W. Stroud, ADC, and the supervision of Mr. Steinert accomplished the work on the engines. So smoothly and effectively did this combination work that when the acid test came, it was taken in stride and made to look easy.

The most critical difficulty encountered occurred shortly before the date

when the squadron was scheduled to deploy to an overseas advanced base. In a period of three days, seven of the P2V-4 planes assigned had to be grounded because oil sludge formation caused seizure of fluid couplings and made the engines subject to failure if operated in that condition.

Fluid coupling seizures caused by oil sludging had been a recurring problem from the beginning of service operation



FASRON 112 man redrills oil passage before installing reworked couplings in the engine.

of the compound engine. A previous fix which increased oil flow through the coupling had failed to provide a cure. Aircraft had been kept flying by the time and energy-consuming method of disassembling engines to clean fluid couplings.

But this time had been well spent, for it yielded sufficient information to enable Wright Aero to redesign substantially the coupling. By the time the large number of seizures was experienced by VP-2, the squadron had completed a 10-day accelerated service test of six experimental models of the redesigned coupling which provided proof, through more than 100 hours of normal operation, that the new part would eliminate seizures caused by sludging.

BUAER and Wright shifted into high gear all the machinery that was required to make the new coupling available and get it installed in operating aircraft.

To economize in time and materials, old couplings from spare engines at such widely separated points as Norfolk and Alameda were quickly funnelled into Wright's subcontractor in Michigan where they were reworked. From there they were shipped by air back



ON THE NOSE section, two mechs install reworked coupling in the engine crankcase.

to East and West Coast overhaul activities and to Whidbey Island.

In the meantime, at Whidbey, fork lifts, bench vices, and whatever else of use was available (including VP-2's engineering crew) had been organized into a field assembly line.

Twelve 16-hour days after the first parts were received, all 18 installed engines had been dismantled, disassembled, reworked, reassembled and mounted.

Corrosion Control Program

BUDOCKS has embarked on an extensive corrosion control program recently. Not only will money be saved, but disruptions of public utilities, especially electric and fuel distributions systems, are expected to become few and far between.

This will be the result of installing cathodic protection systems, arresting and eliminating a high percentage of corrosive damage to underground, lead-sheathed electric cables; gasoline, oil, water, natural gas and air lines; steel docks and piling, elevated and buried tanks and even hot water tanks and piping in personnel quarters.

At NAS ALAMEDA, for example, the Public Works investment is conservatively valued at \$3,000,000. The application of cathodic protection will just about double the expected useful life of the utilities systems involved.

Radiosonde Movie Is Ready

A 25-minute training film on radiosonde has been completed recently under sponsorship of Bureau of Ships.

This film, entitled *Radiosonde Observation and Operation*, shows the overall purpose and operation of the equipment used in radiosonde observations. Radiosonde instruments are sent aloft in aerological balloons to send back information on weather conditions in higher altitudes.

Prints of MN6904 are available at district training aids sections and central aviation film libraries if facilities desire to use them.

NEW ANTI-EXPOSURE SUIT



FLOATING HIGH AND DRY, PILOT IN NEW EXPOSURE SUIT AT EL CENTRO FINDS IT SWIMS WELL

WITH THE Navy operating in cold North Atlantic, Korean and Alaskan waters, the problem of survival confronts Navy pilots who are forced to ditch or bail out. Ten minutes in this freezing water has been fatal.

If a man keeps fairly dry, his survival chances in cold water are greatly increased. Rubberized immersion suits have been available to pilots to give them this protection. The Navy's Mk 2 exposure suit now in use has shown many inadequacies which made it greatly disliked by most pilots. It was a "sweat bag". Some pilots preferred to take their chances on ditching rather than wear this uncomfortable and bulky suit.

To provide pilots with protection they need in a suit which is comfortable, Bureau of Aeronautics asked Aeronautical Medical Equipment Laboratory of the Naval Air Material Center, Philadelphia, to develop a new suit for use by carrier pilots. The Mk 3 constant wear anti-exposure suit is the result.

While the aim of project personnel was to produce a suit which would provide more than adequate protection from cold water, the goal was to design a suit that would be comfortable and completely watertight.

The new suit consists of four major components which integrate into one complete assembly. The suit body is constructed from a rubber-coated cotton cloth which "breathes". The rubber coating is a neoprene base compound which makes the base fabric waterproof.

Yet it allows it to retain 65-70% of its vapor-transmitting qualities.

When the wearer perspires, a large part of the water vapor given off by his body is able to pass through the suit material instead of collecting as water within the suit. This is what happens in a rubberized suit, as anyone knows who has put on a pair of rubber gloves.

The coating also makes the material vermin-proof, fire-resistant and mildew-proof. Much attention was given to tailoring of the suit so that maximum comfort is available for the great majority of pilots. Adequate room at knees and in the seat is provided so that no binding occurs when sitting. Several large pockets are provided for stowage.

To maintain watertight seals at neck and arm openings, natural rubber cuffs were built into the suit body, so designed to allow the individual to adapt them to his particular size and preference. The suit is available in five sizes ranging from 38 to 46.

BOOTS which are integrated with the Mk 3 suit are issued separately so that pilots can choose the proper size for a comfortable fit. They then can be permanently attached to the suit by the local activity (parachute rigger).

The two final components are the gloves and the insulating liner. Gloves are of a leather outer shell, a latex middle shell which seals to the wrist seal of the suit body and a nylon liner to provide warmth. This combination allows maximum sensitivity and

mobility of fingers and protects the hands.

The insulating liner which is worn under the waterproof suit is a one-piece coverall which will provide warmth for the wearer under the most extreme conditions of climatic exposure. Although this liner has high insulating qualities it is neither heavy in weight nor bulky.

Provisions are made in the exposure suit and the liner for an anti-G suit to be worn under the assembly. The anti-G suit hose is inserted in a watertight sleeve. A quick disconnect fitting for the hose has been so designed that it automatically seals when hose is separated from pressure supply line.

A pilot dressing for an overwater



IN -30° ROOM TEMPERATURE, SUIT IS TESTED

mission, say in the North Atlantic, would first get into a suit of long woolen underwear. He then provides protection for his feet by putting on a pair of lightweight woolen socks and a pair of hard-toed shoes. Over his shoes goes a pair of heavy woolen sox.

Next come the anti-G suit and the insulating liner. Our pilot is now ready to get into the suit proper. The portal of entry to the suit is a diagonal opening running from the left shoulder to a point on the right waist. Attached to this opening is a folding canopy through which pilot enters the suit, drawing it on up to the waist.

He then pulls the upper portion of the suit over his shoulders, and pushes his arms through sleeves and wrist seals and his head through the neck seal. The close fit of the rubber neck and wrist seals against the bare skin forms an effective watertight seal.

The inner envelop or canopy then is pulled over several times and forms a tight compact roll across the front of the suit which is held down by a flap and snap fasteners. The anti-G suit hose is passed through an adapter ring on the side of the suit and a rubber sleeve is placed over the hose which fits tightly into the side of the suit, forming a



INSERTING G SUIT TUBE; NOTE INNER LINER watertight seal.

Before this sealing method was adopted, consideration was given to using a watertight zipper to close the suit. If such a zipper had been available, many headaches would have been prevented and a more-easily donned suit would have been possible. However, water tests with suits using zippers showed definitely the "waterproof zippers" would not keep out the water. This made necessary radical changes in suit design. The outcome of such changes is the diagonal opening and the rolled envelope or entrance canopy.

SOME MAY think this method a rather clumsy one, but experimentation has shown it to be the most effective. After a little experience with the suit, one will find that the suit may be donned quickly. Tests showed an experienced man can get into the suit in about one and a half minutes. This may be a considerably longer time than that required to don a standard flying suit, but is a small time penalty to pay for the great additional survival time the suit will give to the pilot forced down in cold Korea waters.

The outer suit by itself affords little protection against heat loss. It is essential that the insulating liner be worn whenever water temperatures are 50° or less. The need for a watertight suit was clearly shown in laboratory tests. To protect the wearer in water of 32° F and air — 30° F, it was essential the liner be kept dry or nearly so.

With the liner dry, and the outer suit functioning properly, a man's useful survival time under the above severe conditions is several hours. However, if the liner gets wet, as would occur with suit leakage, survival time rapidly decreases. As little as 25% wetting of the liner cuts the useful survival time to less than a half hour.

Any further water in the suit will cut this time to a matter of minutes. The amount of water necessary to produce 25% wetting of the liner is about a quart. A pilot wearing a non-vapor permeable suit, such as the old Mk 2, will likely lose a quart or more water via sweating in a flight of two or three hours. All of this collects within the suit, wetting the liner.

Sweating within the Mk 3 suit still goes on, but it does not appreciably affect the insulating qualities of the liner because of vapor-transmitting properties of the outer suit. Perspiration passes through the suit as vapor rather than condensing on the inside as water.

PROTECTION for hands posed a considerable problem in that gloves had to be watertight, seal with the wrist seal of the suit, provide some insulation, and yet allow for dexterity of finger movement so that the pilot could fly with them on. The light nylon inner glove covered with the latex shell will protect the wearer's hands for at least 10 minutes in freezing water.

This gives him adequate time to inflate his life vest and life raft and to climb into the latter. Without this protection, the hands become so numb that one is unable to use them in from 30 to 130 seconds. The latex shell keeps the nylon dry to preserve its insulating qualities and also seals at the wrist with the wrist seal of the suit to prevent leakage into the hands.

Gloves must be put on before the pilot takes off on his flight, for he is not likely to have a chance once in the air. The outer leather flying gloves are worn to protect the more fragile rubber glove from tearing and to add to hand insulation. Although this outer glove does not keep water out, it still will provide protection as long as the inner liner is kept dry. Freezing of the



COMPLETELY DONNED, MK 3 SUIT IS GOOD FIT



FASTENING INNER SNAPS TO WATERTIGHT SEAL

outer glove will not cause too great distress.

In addition to controlled tests in various water temperatures in the lab, the Mk 3 suit was tested in open water, to determine its characteristics in rough water. These were conducted in Naragansett Bay, with water rough enough to produce white caps over the bay. Subjects wearing the complete exposure suit stayed in the water for up to four hours without undue discomfort.

The suit has excellent flotation and will keep a pilot on top of the water indefinitely. It rides over the waves, with little splashing of water in the face.

Active swimming in the suit was not difficult once trapped air had been vented. This can be done easily by crossing the arms over the chest and squeezing against the body. This forced the air up through the neck seal. The seal can be pulled away from the neck slightly to aid this operation, but water must not be allowed to get in.

Underwater swimming could not be accomplished due to the natural buoyancy of the suit. Subjects entered the water in many different attitudes including head first and experienced no difficulty in floating well.

THE SUIT also was worn by a man using the "Dilbert Dunker", and no difficulty was experienced in getting free of the cockpit under water.

To date, 18 live parachute jumps over water and over land have been made by the parachute experimental unit at NAS EL CENTRO, Calif., while wearing the suit. No difficulty was experienced either in bailing out or in the landings.

The jumpers all were favorably impressed with characteristics of the suit on entering the water and found to their amazement the suit kept them dry.



CORPSMEN CARRY AWAY 'WOUNDED' MAN AFTER FIRST HELICOPTER LANDING ON A HOSPITAL SHIP

Hospital Ship Via Helicopter

MCAS EL TORO—At 9 a.m., a mortar shell 20 miles inland exploded, "wounding" an American fighting man.

Less than 30 minutes later the "wounded" man was miles away at sea resting comfortably after receiving medical attention aboard the U. S. hospital ship *Consolation*.

This unique rapid delivery of an "injured" man directly to a hospital ship offshore was done by helicopter, another "first" for that versatile flying machine. Doctors, nurses, sailors and newspapermen on 28 August watched a Marine HTL make what is believed to be the first helicopter landing on a hospital ship.

While the ship was underway, Maj. William E. Abblitt of VMO-2 from MCAF SANTA ANA dropped the pin-wheel on a special 50-foot square flight

deck permanently fitted over the stern of the vessel.

In addition to being faster, this method means less jolting and less handling than patients receive on motor launches bound for hospital ships. Another advantage in helicopter transit is the immediate availability of the complete medical facilities offered aboard a hospital ship.

The *Consolation*, for example, carries 30 doctors, 30 nurses, 5 dentists and 200 hospital corpsmen. Three complete operating rooms are installed aboard the vessel. More than 750 patients can be cared for at one time.

The *Consolation*, which returned recently from Korea, is commanded by Capt. J. W. McElroy with Capt. C. W. Virtue in charge of the hospital aboard.



ONE OF the first photos showing more than one AJ-1 on a carrier is this shot sent in by the CVB Midway. Here four of the giant 50,000-pound twin-engined planes, largest built for carrier duty in the world, are posed on the Midway's long flight deck during a break in qualification flights. The AJ-1 is powered by two P&W Double Wasps and a J-33 jet engine.

14 Pilots Join Air Force Exchange Fliers To 'Visit' For Year

The Navy has selected 14 pilots who will be assigned to temporary duty for a year with Air Force squadrons under the Navy-Air Force pilot exchange program.

Men comprising the newest group of Marine and Navy exchange pilots and Air Force outfits to which they were assigned follow:

Lt. D. M. Longton and Lt. R. A. Nelson, 56th Fighter Intercept Group, Selfridge AFB, Michigan.

Lt. W. R. Carlin, Maj. J. F. Bolt, Jr., and Lt. G. M. O'Neal, 325th Fighter Intercept Wing, McChord AFB, Tacoma, Wash.

Lt. J. W. Eash and Lt. (jg) E. N. Leonard, 3525th Pilot Training Wing, Williams AFB, Arizona.

Lt. J. S. Brown, 3595th Pilot Training Wing, Nellis AFB, Nevada.

Lt. G. M. Ley, 3500th Pilot Training Wing, Reese AFB, Texas.

Lt. (jg) E. C. Fritsch, Jr., 3573rd Pilot Training Wing, Vance AFB, Okla.

Lt. R. B. Varner, 4th Rescue Wing, Hamilton AFB, Calif.

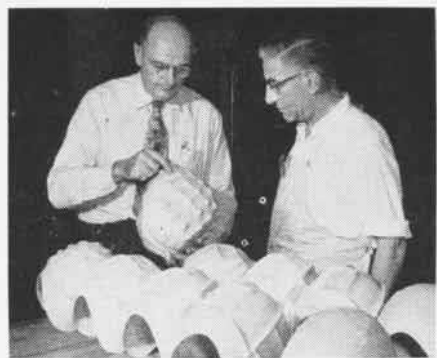
Capt. R. Connelly, 33d Fighter Interceptor Wing, Otis AFB, Falmouth, Mass.

Lt. G. W. Hoskins, 52nd Fighter Interceptor Wing, McGuire AFB, New Jersey.

Lt. J. S. Kenyon, 62nd Fighter Interceptor Squadron, O'Hare Airport, Chicago, Ill.



ASS'T NAVY SECRETARY for Air John F. Floberg recently made his first solo hop while on a visit to NAS Pensacola. After making the SNJ flight, he was presented a solo certificate by VAdm. John Dale Price, chief of Naval Air Training. Sec. Floberg was a destroyer man during World War II days and flew in light planes before then.



HELMETS—Developing plastic materials for pilots' protective helmets is only one of the jobs the Naval Air Material Center in Philadelphia is undertaking in the safety equipment field. Here engineer Bair and carpenter Nicoletti inspect a few samples

New 'Clamshell' Hangar



MOBILHANGAR AT CHERRY POINT IS SHOWN HERE FULLY EXTENDED, READY TO RECEIVE AIRCRAFT

A MOBILE hangar, especially designed for expeditionary purposes, is being used at MCAS, CHERRY POINT, N. C.

Because of the ease with which its two mobile sections are closed, Marines call the new hangar the "Clamshell."

The Mobilhangar, first of its type to be constructed, costs approximately \$81,000. It was built by the Mitchell Mobilhangar Corporation, New York.

The tracks on which the hangar sections roll together are imbedded in a reinforced concrete foundation. The hangar can be opened or closed in two minutes. Four electric motors, located in the hangar, furnish the power to pull the sections back and forth.

The hangar is designed to enclose any type plane on the station. In the open position, aircraft taxi into place between the two halves, and then the hangar is closed.

Work benches, tools, equipment and offices are located along the inside walls of the hangar sections. Control switches are placed on an inside catwalk. The



MARINES' MOBILHANGAR IN CLOSED POSITION

tail section of larger plans are extended outside the hangar through an open section.

The hangar is 29 feet high, 173 feet long, and weighs 118 tons. Each side is 100 feet long. When fully opened, the distance between the longest diagonal corners is 333 feet, and the space between the joining halves, 160 feet.

Where the two sides of the hangar meet, waterproof rubber sealing is used. A sloping concrete floor allows water to drain off if there has been rain while the hangar is open.

The chief advantages of the hangar are its mobility, its relatively low cost, and its lack of doors. Hangar doors are expensive and difficult to maintain, so the new hangar eliminates that problem. The hangar can be taken apart, moved to another place and put in working order in less than two weeks.

ASW Trainer Built by Pair Record's Prop Noises Make it Realistic

NAS SAN DIEGO—Two enlisted men attached to VS-25 have developed a trainer for antisubmarine work which is expected to save the Navy thousands of dollars and valuable time in training men for ASW.

Before development of the trainer, submarines were required to work with aircraft in tracking exercises. The device, called the interim sonobuoy trainer, will eliminate need of actual submarines in most cases and yet provide realistic training.

The compact, portable unit was developed by Theron D. Hiatt, ALC, and

Bob J. Aebischer, AL2. Some of its parts are phonograph recordings of submarine propeller and rudder noises and underwater sounds. The sonobuoys are placed in a pattern similar to that used in actual practice with subs, but closer together—and on dry land.

"It's difficult for inexperienced men to recognize the sound of a submarine when they have contact with it," said one of the inventors. "By using the records, they can listen to the sounds here in the shop and recognize them before they fly."

VS-25 uses the trainer right in its hangar with the sonobuoys placed in a miniature pattern on the hangar roof. Technicians who set up the pattern know the simulated track of the submarine and can check the men's work for accuracy, something impossible in maneuvers with actual submarines.

RAF Pilots Train With Navy Speech Differences Prove No Difficulty

NAS WHIDBEY ISLAND—Value of the British-American exchange program to understanding mutual administrative and operational problems was praised by a Royal Air Force flier who completed 18 months of operations with Fleet Air Wing Four squadrons here.

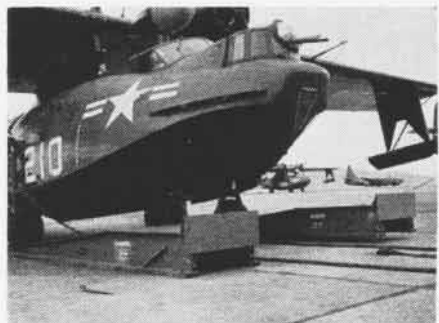
Squadron Leader Maechel A. Ensor, who has been flying P2V's, was relieved by another RAF pilot, Flight Lieutenant Ernest J. Strangeway. Ensor said difference in speech on radio communications was no problem. "You get pretty bi-lingual after a while. In my flights there is the advantage that the control tower never had any question about who was contacting them," he said.

Strangeway had this comment: "There is no difficulty in understanding, but it is amusing to me to see the slow smile that spreads over every American's face after I speak more than a few words."

Ensor flew American-made Liberators on antishipping patrols during World War II after being commissioned in the New Zealand Air Force in 1939.



SQD. LDR. ENSOR (LEFT) GREETS STRANGEWAY



ONE RAMP IN POSITION, SECOND BEING MOVED

PBY Beaching Gear Ramps

At NAS SEATTLE, two Public Works Department employees, Frank Holberg and Darl Kelley, have designed and constructed steel ramps for beaching PBY's. The design has been approved under the Navy Beneficial Suggestion Program.

The mobile main gear ramps are a great improvement over the old style wooden type. Its unique "retractable landing gear" allows two men to move a ramp by hand, thus eliminating the need for a tug or Cle-trac which was necessary in spotting the wooden ramps.

Steel construction guarantees long service life. The ribbed steel tread and integral end blocks are excellent safety features.

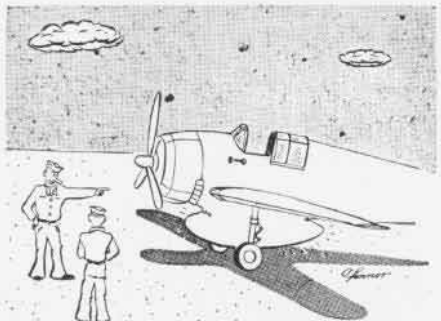
Library Files in Colors

Because of the various types of work performed by FASRON 3, four shops have been equipped with libraries: power plants, airframes, ordnance and electronics at NAS NORFOLK. FASRON-3 uses the technical libraries constantly for reference and research.

Because of the many different types of publications, especially in the power plants shop, it has been difficult to arrange the material so that it can be readily located.

A unique method was developed to meet this problem in the power plants shop library. The binders in which the publications are filed and the file boards on which they are listed, are marked with different colors to indicate the particular type of publication. Each binder and file board is also stenciled with the aircraft engine or accessory in a color that corresponds to the contents. For example, green is the color for jet aircraft, white for jet engines, yellow for conventional aircraft, red for reciprocating engines, and blue for engine accessories, etc.

This system has made quick and ready reference easy for maintenance men looking up material.



"WELL, I'LL BET YOU FIVE TO ONE THAT IT ISN'T"

Navy Nails Help Jamaicans

NAS SAN JUAN—As soon as the destructive hurricane which killed 150 persons in Jamaica had passed, the Navy began flying nails to the wrecked island.

From San Juan naval station 8,000 pounds of 4, 6, 8 and 10-penny nails were flown to Guantanamo, Cuba, for transshipment by Navy rescue ship, the USS *Opportune*.

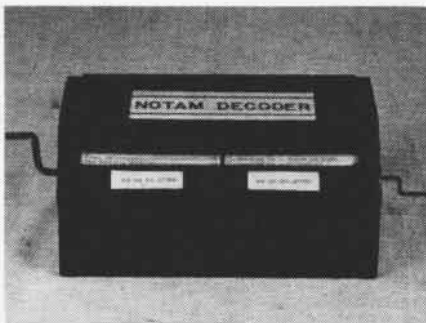
At Guantanamo, the Puerto Rican shipment was added to 12,000 pounds of nails and 25,000 pounds of corrugated wire roofing. RAdm. Marshall R. Greer, Com 10ND,



SAN JUAN LOADS NAILS IN PLANE FOR JAMAICA

made the building supplies available at cost to the American Red Cross which donated them to the Jamaica branch of the British Red Cross. Another Navy shipment of 1,500 pounds of nails was flown the same day from Panama.

LCdr. Howard W. Couch in the photo is checking weight on a shipment being loaded at San Juan.



PATUXENT NOTAM DEVICE SAVES A MAN'S TIME

Notam Decoder Saves Time

NAS PATUXENT RIVER—After a year's tryout, this station had put its approval stamp on a time-saving device which helps air control personnel in decoding and filing NOTAM's.

J. W. Strickland, AC1, supervisor of the clearance desk, went to work on the problem instead of griping about it. It saves one man's time each watch and assures accurate up-to-the-minute NOTAM information.

The device consists of two drums operating individually by cranks on either side of the box. The code and interpretation is type-written and glued to the drums. The left drum contains the second and third letters of the code and related facility. The right hand drum has the fourth and fifth letters and an explanation of the condition of the facility.

In operation, the letters on the drums are lined up as received on the NOTAM, with the scribed lines on the plexiglas window.



LONG-HANDLED WRENCH LOOSENS PROP NUTS

Prop Nut Wrench is Handy

NAAS CORREY FIELD—A new prop retaining nut wrench has been devised by Don L. Smith, ADC, of Carrier Qualification Training Unit Four.

Power is applied by the wrench to the propeller retaining nut on the principle of shear strength instead of bending strength. Trouble has been encountered in the past by breaking the teeth off the wrench head when the old-type wrench handle was used. The new wrench has been in use for six weeks, and no trouble has been encountered.

This new wrench is used on AD's, F8F's, and F6F's. The handle is 10' long and the circle is $4\frac{3}{4}$ " on the inside diameter and has a wall thickness of $5/16$ ". Holes were drilled to accommodate a 1" chrome molybdenum steel pin which has an overall length of 7". The new wrench has definitely proved superior to the former type.

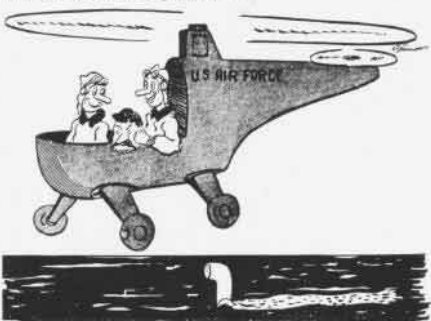
► **BuAer Comment**—This wrench is an improvement over wrenches currently in use. However, two other types of propeller nut wrenches are now undergoing tests at several naval activities to determine which the Navy will adopt. The new wrenches will enable the operator to tighten the prop nut within prescribed torque limits.

Boxer Sets Rearming Mark

The aircraft carrier *Boxer*, flagship of Carrier Task Force 77 off Korea, shattered the *Princeton's* rearming record during a recent replenishment period.

The *Boxer* took munitions from the ammunition ship *Paricutin* at the rate of 185.38 tons an hour. The *Paricutin* commented that it was the most expeditious rearming ever accomplished between that ammo ship and any other type ship.

An important factor in the speedy operation was that wire nets, rather than skip boxes, are used almost exclusively by the *Paricutin*. Good stationkeeping by the *Boxer* and enthusiasm of its working crews helped make the record possible.



WANT TO HAVE SOME FUN?

1000 Hours Between Overhaul

THE NAVY J-42 *Turbo-Wasp* jet engine, which is powering the F9F-2 *Panther* in Korea, has become the first jet aircraft engine to reach an officially authorized service life of 1,000 hours between major overhauls.

When BUAER authorized the 1,000-hour overhaul interval, it put the Pratt & Whitney jet on a level of durability with piston engines. P&W piston engines now have overhaul intervals ranging from 800 to 1400 hours, depending on the model.

In addition to reducing the number of major overhauls required, the durability of the J-42 has enabled the Navy to cut substantially its orders for spare engines and spare parts.

During the past year, J-42's logged more than 100,000 hours in the air propelling *Panthers* 50,000,000 miles. Of this total, a fifth was in combat over Korea. The engine has flown two years and 150,000 hours without a single turbine blade failure, boosting its overhaul period from 150 hours to 1,000 hours.

The centrifugal-flow type engine has proved extremely durable in the face of major battle damage. Many Navy and Marine pilots reported "swallowing" rocks, three-inch tree-trunks and various debris from their rocket and cannon fire in air intakes without serious damage.

Capt. George Keys, a Marine *Panther* pilot, was hit by enemy machine gun fire in Korea while bombing and strafing at tree-top level. One bullet entered a J-42 combustion chamber, tearing a 2½" hole in the cover and then passed through the nozzle guide vanes and entered the turbine which was whirling at about 12,000 rpm.

The bullet swirled around the turbine several times, curling the turbine blades to two-thirds their normal area, before it passed out through the tail-pipe. Capt. Keys reported he felt only a slight jar, and made several more bombing and strafing runs at full throttle without any engine malfunction or loss of speed.

He flew 20 minutes more at 100% power while in the target area and then flew for an hour and 20 minutes at cruising speed to reach his base safely, with only a slightly higher fuel consumption and two percent increase in engine revolutions to indicate the major damage suffered by the engine.

Maj. Paul Allen of the same Marine squadron, took eight bullets in his *Panther* from ground gunners, including one slug that entered a combustion chamber and plowed forward into the

compressor through the air inlet screen of the rear compressor face.

It chewed up the torroidal and inducer vanes before swirling through the compressor for several revolutions and then flew out through another air inlet screen. He flew for 40 minutes after being hit, 20 at full power, to return to base.

The J-42 was adapted from the *Nene* design of Rolls-Royce Ltd., and is rated at 5,750 pounds using water injection. The J-48, a more powerful version developed from the J-42, is in the F9F-5. It turns out 6,250 pounds thrust, with extra power if it uses water injection and the afterburner.

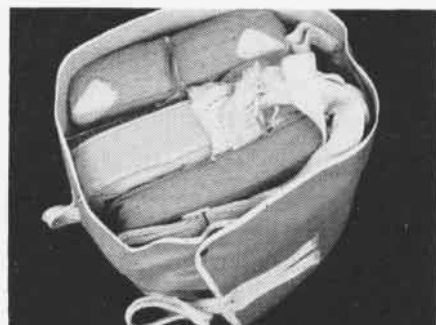
Lucite Aids Night Flying

NAS KEY WEST—A night operations aircraft status board which simplifies the job of keeping track of planes has been developed by Lt. O. R. Willingham of the Fleet All Weather Training Unit here. It also preserves night vision.

The board uses the same principle of lucite transmission lighting employed in CIC vertical plotting boards. Lighting is effected by six fluorescent bulbs of 40 watts each, built into the depth of the board and aligned through a ¼" space into the thickness of ¼" lucite.

Six sheets of ¼" lucite were engraved by hand on the back side to required spacings and lettering. The inside of the board and all aluminum angles were painted a non-reflecting black, with wax pencil used for illuminated writing on the front of the lucite panels.

As a finished result the board was mounted in a room adjacent to the operation office.



SEAT PARACHUTE WITH PK LIFERAFT IN COVER

Parachute Carrying Cover

A parachute carrying cover, designed by David T. Hutchinson, PR1, at NAS LAKEHURST has been approved under the Navy Beneficial Suggestion Program.

The cover protects a parachute from water, oil and grease in parachute lofts or planes. It also facilitates carrying the parachute.

The ends of the cover may be fastened to the pilot's seat with duradot fasteners for security when the pilot is in the seat. The carrying cover is designed specifically for seat type parachute assemblies containing a paraft kit, but it is suitable for any type assembly.

Flare Stowage Is Simplified

VR-3, MOFFETT FIELD—The problem of safe stowage of pyrotechnics was solved by maintenance men by construction of a stowage locker in the transport aircraft.

The cabinet is 22"x23"x15", box-like in design and painted red. The back is cut out to conform with the fuselage contour in the R5D. Shelving arrangement is such that 24 Very pistol cartridges, a Very pistol and four white smoke grenades can be housed on the top shelf. Eight drift signals are clamped in an upright position in the lower part of the box.

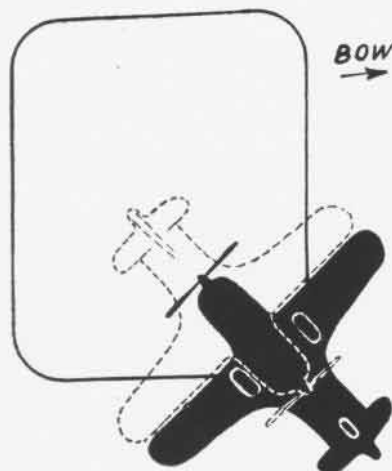


CARRIER NOTES

BUREAU OF AERONAUTICS—SHIPS INSTALLATIONS DIVISION

Flipping a Fighter

A simple method of righting a fighter plane lying on its back after flipping over the barriers is being studied by maintenance and Ships' Installations activities.



LOWERING ELEVATOR CAUSES PLANE TO RIGHT

Used first aboard the CVE *Windham Bay* in February, 1945, the system called for the plane to be towed until its nose is positioned over the deck elevator as illustrated in the drawing. When the elevator is lowered somewhat, the plane nose drops into the elevator well. The leading edge of the wings serves as a fulcrum and the plane will right itself. The elevator is lowered a distance slightly greater than the dimension from the leading edge of the wing to the prop hub.

Steading lines were used to lower the tail until men could reach and lower it to the elevator decking. Wind over the deck can be used to assist in lifting the tail. Capt. G. T. Mundorff was commanding officer of the *Windham Bay* at the time the idea was developed.

Barrier Position Indicators

Fleet commands have emphasized the danger to personnel encountered at night in regard to raised barriers. Owing to darkness and noises encountered in the vicinity of the barriers, personnel are quite often unable to see or hear the barriers rise. To reduce this hazard, the BU-SHIPS is initiating a project for the development of an illumination system suitable for this application.

As an interim measure to correct the hazardous condition, the installation of luminous material is recommended. Luminous material (phosphorescent tape), type "P", class "GP", stock no. 17-L-22150 (4" x 10 yds.), which is available in General Stores, should be placed on barrier cables, spaced so as to provide the most effective marking.

Elevator Safety Rails

A recommendation concerning the operation of flight deck safety rails at airplane elevators is being made by the Bureau of Aeronautics to the Bureau of Ships. This suggestion provides for elevating the rails to a height of 24" to 27" above the flight deck level before the elevator starts to descend. At present the ascent of the rails does not begin until simultaneous descent of the elevator. The elevator platform and safety rail are to continue being simultaneously flush with the flight deck when the elevator returns to the flight deck level.

It is believed that the increased safety for flight deck personnel warrants the resulting increase of about two seconds in the operating time cycle.

Revision of NAF Reports

Naval Aircraft Factory Reports, listed under "Ships Installations" in the cumulative supplement to *Naval Aeronautics Publications Index*, NAVAER 00-500A, are in the process of revision and replacement by NAVAER Publications. They will be stocked at the aeronautical publications supply points.

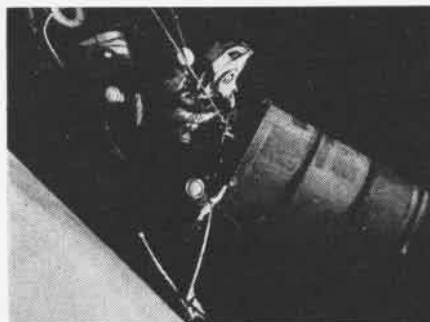
This revision and replacement program has been undertaken to standardize arresting gear and catapult publications so that they may be included in the aeronautical publications supply system to facilitate distribution. At present, four of the listed reports have been revised and are entered in the publications system. The remaining six reports will be revised and entered in the system as soon as practicable.

Carriers Transfer Engines

USS CORAL SEA—A novel way of transferring two R-3500 aircraft engines from one aircraft carrier to another while underway in the Mediterranean was tried out successfully by this carrier.

Since the engines weigh nearly 5,000 pounds apiece, there was some concern about possible damage to the ship's boats owing to the inability of the slow speed airplane crane to match their motion alongside.

The problem was solved by lowering the

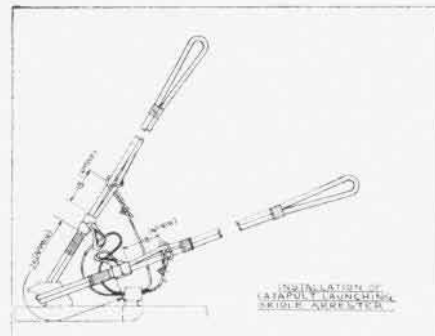


CORAL SEA MEN HOIST ENGINE CAN FROM WATER

engines into the sea in their containers and towing them between ships. While this may not be the first time this method of transfer has been used, it is original to this ship.

High Pressure Air Service

Based on the recommendation of fleet commands, the installation of high pressure air outlets has been authorized by the Bureau of Ships for the CV-9, CV-34, and CVB-41-class carriers. These additional outlets, two on the hangar deck and one on the flight deck, will facilitate filling air bottles in servicing embarked aircraft. These outlets will be installed on carriers currently under conversion and will be backfitted on others as soon as practicable.



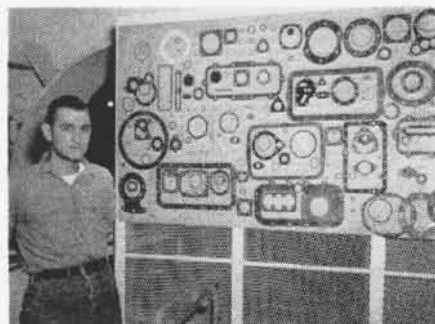
Catapult Bridle, Arrester

A new improved method of attaching the bridle arrester cable to the catapult launching bridle is being investigated and tested at the Naval Air Material Center, the Naval Air Test Center, aboard the USS *Siboney* and the USS *Philippine Sea*.

A description of the new method will be issued as an H4 and H8 catapult change after results of tests are known.

The improved method was suggested by catapult personnel of the USS *Essex* and consists of shortening the 5/16" arrester cable and attaching it to the launching bridle at a point approximately 18" above the lower attachment points as shown in the accompanying sketch.

Operations to date indicate that the shorter arrester cable will improve the launching interval in that it does not snarl, twist or kink as did the longer one which was attached to the bridle eyes.



STOREKEEPER Sawicki helps mechanics aboard USS *Philippine Sea* pick gaskets quick as a wink by displaying them on board shown here

• VR-1, PATUXENT—This squadron uses a metal-surfaced wall map to keep track of all of its planes, from Turkey to Greenland and the equator. Magnetized miniatures, with names of crew, are stuck on the big map.



AVIATION ORDNANCE

Data on M3 Driving Spring

In an article printed in the June 1951 edition of *Naval Aviation News*, instructions were issued for the replacement policy of the new braided driving spring B7237353. The latest tests conducted at the Naval Proving Ground, Dahlgren, reveal that these instructions should be altered in accordance with the following data.

Instructions: The driving spring should be closely inspected each time the gun is disassembled and should be replaced if the free length is found to be less than 27 1/4 inches in lieu of the previous specified 26 3/4 inches.

The springs tested at the proving grounds underwent a high initial set after the firing of only a few rounds, but this set eventually leveled off. Similar operational characteristics can be expected from all braided driving springs now in service use.

It is expected that the life of the new braided springs will exceed that of previous standard single strand type A25596.

The driving springs should also be discarded if, upon inspection, there exist sharp kinks or if there is an offset of coils which might cause binding or excess friction.

Precaution: Owing to the greater force exerted by the new drive spring, special care should be exercised by all personnel when removing it from the gun. *Under no conditions should the spring be stretched after it has been removed.*

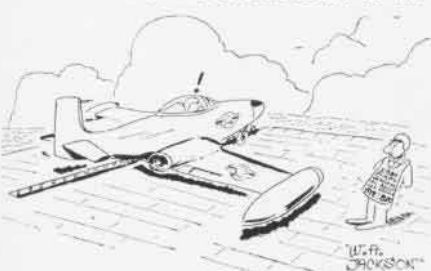
The Bureau of Ordnance invites all units to comment on the performance and life now being obtained by the braided driving springs. Comments should be submitted to the Aviation Ordnance Branch (Ma8-1a).

Do Not Blame the Ammo

Several reports have been received by BUORD describing ruptured blast tubes encountered while firing .50 cal. aircraft machine guns.

In most instances, the blast tubes are said to explode with such violence that wing ribs are bent or damaged and complete wing changes are necessary. Activities are prone to blame the caliber .50 ammunition for such accidents, especially the incendiary and API types. However, the ammunition is not directly responsible for these explosions. The type of ammunition used is of little consequence.

Tests indicate that as each round of am-



munition is fired, small bits of unburned powder, primer compositions, oils and greases used in lubrication of the guns, and quantities of combustible gases are accumulated in the blast tube. When sufficient residues accumulate, the muzzle flash from any round may ignite these materials and gases. Or an overheated gun may do the igniting.

Since air pressure on the leading edge of the wing tends to close partially the mouth of the blast tube, the effect described above would be similar to touching a lighted match to an "empty" gas tank.

Most accidents of this type occur when the plane is in a strafing run. Overheated guns that cause tumbling projectiles and exploding blast tubes are the inevitable result of excessively long bursts.

Remedies: (a) Inspect blast tubes for proper alignment, cracks, pits and explosive residues of type indicated above. Swab out with warm water or liquid rifle bore cleaner. Reinspect frequently, repeating cleaning operations as necessary. (A cracked or broken blast tube may allow the combustible gases to leak into the wing itself. Then, should an explosion occur, *!*) (b) Make sure that blast tubes are properly aligned when guns are boresighted. (c) Avoid firing long bursts of ammunition. (d) Avoid overheating the guns.

BuOrd's New "Canned Fish"

A series of metal containers have been developed for storage and shipment of torpedo components. These containers eliminate most of the current laborious process of preserving and packaging torpedoes. The torpedoes, stored in an atmosphere of dry air under pressure, can be readied in a fraction of the time previously required to disassemble, remove heavy preservative compounds and reassemble them.

The containers are fabricated of sheet steel with rubber gasket seals at the bolted flanges. For shipment and storage they are filled with dry air under 5 pounds pressure to insure against moist air leaking in. Silica-gel bags on the inside also prevent condensation. Air intake and safety relief valves are provided on the end heads. Torpedoes are securely bolted to a sled which is rolled into the container and bolted to it. Rubber shock mounts prevent damage due to rough handling in shipment.

Three designs of a series are currently in production; the torpedo container Mk 1 Mod 0 for torpedoes Mk 14 and Mk 15; the torpedo containers Mk 5 Mod 0 for torpedo Mk 27; and the torpedo container Mk 6 Mod 0 for torpedo Mk 34.

These containers are adaptable to outdoor stowage of torpedoes at advance bases, eliminating the necessity for special racks and covered stowage. These "canned fish" will be perfectly preserved. This new method of stowage has many advantages over old methods.



SALVAGED PARTS MAKE UP NAPALM BOMB HOIST

Napalm Hoist Saves Labor

USS PRINCETON—Removal of loaded napalm tanks, weighing up to 900 pounds, from bomb racks in the event of dud planes or cancelled missions was a backbreaking problem until ordnancemen aboard this carrier improvised the hoist pictured here.

The essential parts of the lift were an actuating cylinder salvaged from a TBM aircraft, wheels from a battery truck and a supply of scrap metal. Put together by the ship's metal shop directed by Lt. C. L. Jones, they made a squat mechanical giant that has moved thousands of tons of napalm fire bombs from one plane to another without cracking one of the tanks.

'Ordwell' Ordnance Ready

A new publication written for Aviation Ordnance personnel exclusively, will soon be distributed to all Fleet units. OP 1910, "Ordwell" Ordnance describes in brief, concise, and animated form the proper operation and maintenance methods to be used on the 20mm Aircraft Gun M3 for all weather operation.

"Ordwell", in his poetic manner, will give you all the latest information concerning new equipment presently in the Fleet. He also describes the latest types and methods of lubrication for the guns and ammunition. The data promulgated by him is the latest information obtained from the Bureau of Ordnance. If his brief but accurate instructions are followed, all 20mm Aircraft Gun M3 woes will be done away with.

Brooklyn is mighty proud of "Ordwell" and we hope you too will gain by his acquaintance. Stand by to meet him soon!

• FLOGWINGLANT/CONTL — During August, 280 travelling military personnel rode on ferry flights of VR-32, San Diego, thereby saving the Navy in the cost of military travel orders and boosting the morale of personnel trying to get home in an emergency.



HE WON'T GRADUATE WITH THIS CLASS EITHER

LETTERS

SIRS:

With the Navy buying a number of R70 *Super Constellations* from Lockheed Aircraft Co., and also having dozens of PV-2's and P2V's made by the same company, the thought occurs to me: Why doesn't the Navy standardize on the letter "V" or "O" for Lockheed planes instead of using two letters?

The "O" is frequently mistaken for a zero and the uninitiated call the *Constitutions* R-Sixty instead of R-Six-Oh. Perhaps it would be better to have all Lockheed planes in the future designated by V's and do away with this TO-2, P2V, R70 confusion.

A READER

¶ We could not find any definite answer to that one but a look at history might clear it up. The letter "V" was assigned to Vega Aircraft Co., which designed the P2V in 1942. In 1943 its merger with Lockheed became complete and any planes designed since then carry the Lockheed Official "O" designation. There will be no more V's. The Navy had two R10 planes, one a Romeo-Fokker obtained from the Italians in 1927 and the other a two-place low-wing monoplane made by Lockheed in 1931, called the *Altair*. The R20 through R50 transports came out between 1935 and 1941.



SIRS:

I have been a subscriber to NAVAL AVIATION NEWS since the latter part of 1948 and have enjoyed each issue immeasurably. Your publication continues to give topnotch coverage of naval aviation both pictorial and editorial-wise.

Since my return to civilian pursuits in 1946, I have taken even greater interest in your articles describing the latest types of service aircraft and of the over-all functions of the Navy's air arm. Even *Grampaw Pettibone's* barbs directed at current *Dilberts* seem to have more sting while getting around to accident prevention. I am most pleased to take this opportunity to laud your efforts and to thank you for a first class publication.

One of the most interesting series of articles to me as a Reservist is that of squadron histories. They not only make good reading from an informational standpoint but they also bring back nostalgic memories of good fellowship enjoyed by men joined in a cause.

LT. (JG) R. L. COLBY, EX-VPB-108

FORD MOTOR CO.
DEARBORN, MICH.

¶ The News has suspended running squadron histories in view of the current international situation which claims top priority in the magazine.



SIRS:

In connection with the recent rash of jet squadron safety claims being displayed in your excellent publication, VF-62 would like to present its record.

Currently holding the Navy "E" pennant won while flying F8F's, the squadron re-

ceived its first F2H-2 *Banshees* in August 1950. In early September the squadron suffered a material failure wheels up landing. Since then, the outfit has racked up more than 3030 accident-free hours including 606 day carrier landings and 37 night landings. Much of this can be attributed to excellent maintenance.

Recently the squadron engaged in intensive qualifications aboard the USS *Oriskany* in preparation for an extended cruise. In a period of five days the pilots chalked up 468 day landings and 37 night landings with no accidents. For all but seven of the pilots, these were their first jet landings aboard a carrier.

On 25 April LCdr. Kelly, squadron CO, established what is probably a record for jet landings by making 23 test catapult shots and 23 landings aboard the *Oriskany* in less than two hours.

G. WILKES, LT. (JG)

PUBLIC INFORMATION OFFICER



SIRS:

Fighter Squadron 781, the first Reserve squadron to return to active duty, has seniority comparable to an air group. The present roster lists four lieutenant commanders, 24 lieutenants, and 11 lieutenants junior grade. Ensigns are extinct in this Reserve organization!

Aboard ship, this has disadvantages, for on the *Bon Homme Richard*, "senior grades" have the questionable privilege of living in the junior officer's bunkroom.

The Pacemakers' seniority doesn't stop at the collar device, but extends to experience and flight time. More than 75% of the squadron had combat in World War II, and the average flight time is 1600 hours per pilot.

Small are the complaints about lieutenants flying wing and living in "Boy's Town" when compared to the angry denials that an average age of 28 is to a fighter pilot what Grampaw Pettibone is to NAVAL AVIATION NEWS!

LCDR. C. I. OVELAND



SIRS:

In the August issue, an article on page 10 contradicts a caption under a page 14 picture; both articles concerning Marine enlisted pilots in Korea. The picture caption names the six "only" enlisted pilots in the Korean war, while page 10 names four other Marine enlisted pilots.

For the record, and to give credit where due, may I point out that approximately 35 Marine enlisted pilots were serving in the Korean theater as of 30 June 1951. In addition to these, about as many more have served a tour in Korea and have been returned to U. S. under rotation.

Also for the record, seven Marine enlisted pilots have given their lives in the service of their country in Korea.

ROBERT L. WOOD, 1ST LT.

OFFICE OF INFORMATION
NAVY DEPARTMENT

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● THE COVER

The Navy's newest antisubmarine team, the AD-4N and AD-4W, is pictured on the cover. The top plane carries a combination searchlight and sonobuoy dispenser under one wing, a torpedo on its belly and a fuel tank on the other wing. The lower plane packs the heavy radar detection gear. Photo by Douglas El Segundo.

● SUBSCRIPTIONS

An unclassified edition of Naval Aviation News, containing special articles of interest to Reserves, is available on subscription for \$2 a year through Superintendent of Documents, Government Printing Office, Washington 25, D. C.

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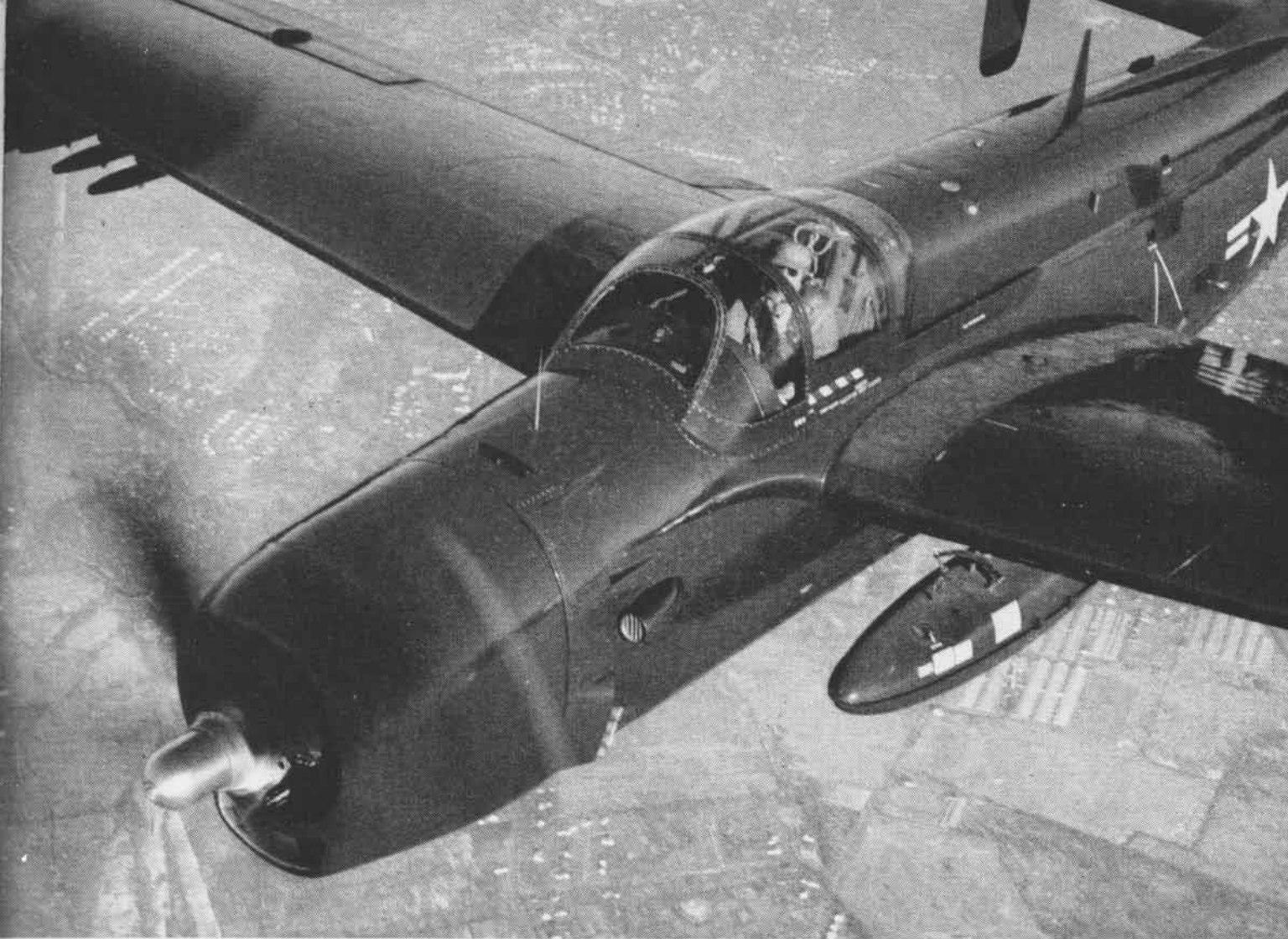
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SUBMARINE ENEMIES

The two newest additions to the Navy's antisub lineup are the AF-2S Guardian, shown here close up, and the Martin P5M-1 Marlin



Restricted



14 MILES UP

Naval aviation flies higher
and faster than man has
ever gone, meeting the challenge
of air-sea supremacy over the world

NAVAL AVIATION
NEWS

Restricted